Interfaces

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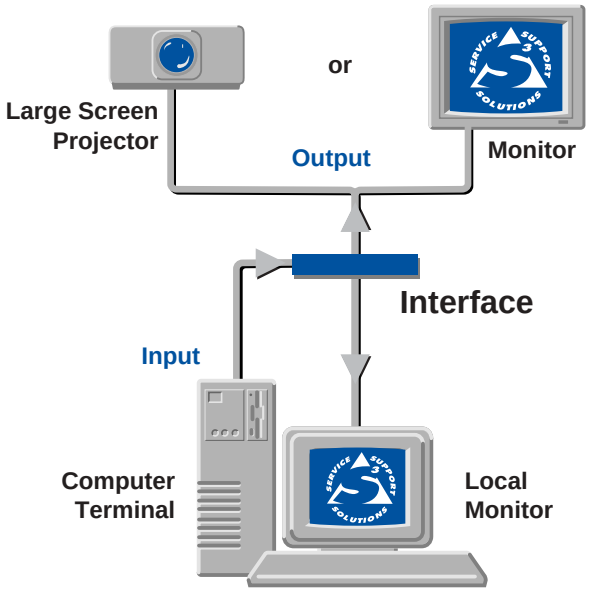
Selecting the Right Computer-Video Interface

STEP 1: WHAT ARE INTERFACES?

A typical question is: "Why do we need an interface?" To answer this question, look at the diagram below:



An interface is a signal amplifier that includes signal processing capabilities to drive a signal over various lengths of cable. This is useful for ensuring signal format compatibility between various sources and destinations and to compensate for the effects of marginal quality or long lengths of RGB cable.

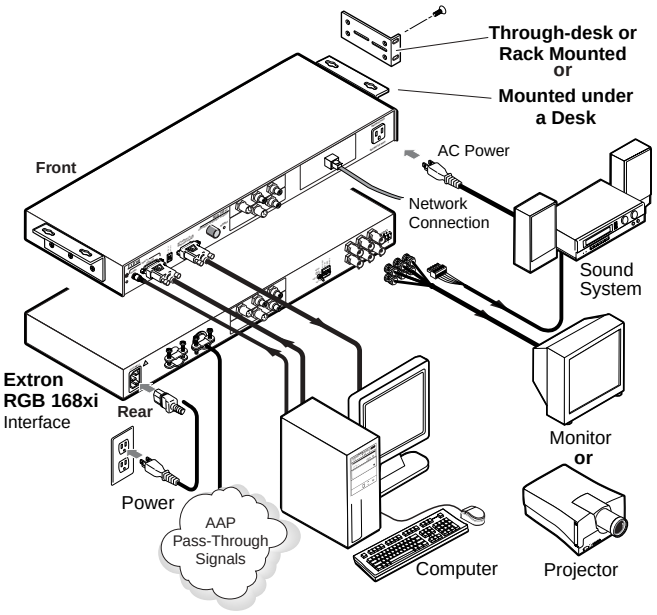
There are several functions of an interface. The primary function is to buffer (or convert) the computer's output signal to the appropriate level and format of the local monitor to prevent loading (double termination) and impedance mismatch from the projector. This is necessary because computers can output their information to a display as one of three different types of video signals: TTL, analog, or ECL. These signals are a combination of red, blue, and green sync signals sent from the computer. The output of each of these components can vary between manufacturers. Because there is little standardization in computer-video display, a computer-video interface is essential to ensure the signal is compatible with the display device.

A computer-video interface maintains the video resolution and frequency of the original source, and also ensures signal integrity. It also provides sharpness (peaking) and gain to compensate for cable loss. As a sync processor, an interface converts, combines, and separates horizontal and vertical sync signals as needed for proper projector operation. An interface also converts unbalanced audio to balanced audio (active PC audio interfacing). Performance features such as automatic on/off and horizontal and vertical centering provide more options.

Note: As a general rule of thumb, always use peripheral equipment that can handle at least two to three times the bandwidth of your original source.

STEP 2: HOW ARE THEY USED?

Interfaces can be found almost anywhere a computer is used to share information with a group of people: classrooms, boardrooms, conference rooms, lecture halls, etc.



Here's an example of an application using a universal interface. The interface (RGB 168xi) is mounted under a desk. A laptop provides the video and audio inputs. An Architectural Adapter Plate (AAP) provides a network connection for the laptop. The interface then routes the video to a monitor and a projector.

To decide which interface model is best for a specific application, answer the following questions:

- **What type of computer(s) or graphics card(s) will be used?** It is necessary to know what types of computer or graphics card will be used before beginning the search for an interface. A universal interface should be considered if these are unknown.

- **Will there be several computer sources used at once?** If multiple input sources are to be used and their displays run simultaneously, each source must have its own interface. If multiple input sources are to be switched between, then an interface with multiple inputs, such as the RGB 203 Rxi, should be selected.

- **Where will the interface be located and will it need to be moved?** If the interface is to be moved frequently, such as in a rental application, then the standard box-style interface should be chosen. In permanent installations, particularly when the interface will be placed in a high profile or space limited environment, it is customary to hide the interface. For this reason, Extron developed the Architectural Series. These devices are full-featured interfaces that come in a variety of configurations, including models with detachable brackets for mounting under or through a flat surface, and low profile models designed to fit flush with the surface they are mounted through.

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Selecting the Right Computer-Video Interface (continued)...

- **What is the technical level of the user, and who is going to have access to the interface?** This is an important question when considering whether to use an interface with external, easy-to-access adjustments, or internal adjustments that will deter unauthorized users from making unwanted or improper adjustments. Solutions where all adjustments are made remotely are available.

- **What features are needed in this interface?** Important features might include audio interfacing, peaking (sharpness), horizontal and vertical positioning, digital sync processing, LCD scan rate read-out, local monitor output, and termination.

STEP 3: CATEGORIES

After answering the questions about how an interface will be used, identify the category that best matches the product needs. Extron interfaces are organized in the following categories:

- **Dedicated Interfaces—** Designed to operate with only one type of computer or graphics adapter.

- **Universal Interfaces—** Designed to operate with multiple types of computer signals, including a mix of analog and digital (ECL and TTL).

- **Architectural Series—** Designed as a system solution for permanent installations with interfaces that mount in walls, shelves, podiums, the floor, or in or under tables.

STEP 4: PERFORMANCE SPECIFICATIONS

Refer to the Interfaces Cross-Reference to find the interface that meets your requirements.

Architectural Series Interfaces and Floor Box Compatibility

Model	Ackermann GB3	Ackermann GB2	Ackermann GES9B	FSR	Steel City AFM 2	Steel City AFM 4	Steel City AFM 6	Steel City AFM 8	Steel City 665
CIA111AM	■								
CIA114AM		■							
CIA114F5									■
RGB 460xi Series				■				■ with SC-AFM 8 mounting kit	
RGB 472xi Series				■				■ with SC-AFM 8 mounting kit	
RGB 460xi SC-AFM2					■				
RGB 460xi SC-AFM4						■			
RGB 464xi SC-AFM 6							■		
RGB 468xi SC-AFM 6							■		
RGB 470xi SC-AFM 2					■				
RGB 472xi SC-AFM 4						■			
RGB 474xi SC-AFM 6							■		
RGB 478xi SC-AFM 6							■		
RGB 560 AKM			■						

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Interface Cross Reference

Products	Bandwidth (MHz, @ -3db)	Compatibility: VGA (15-pin HD)	Compatibility: Macintosh (15-pin D)	Compatibility: Workstations (13W3)	Input: 9-pin D Male Input Connector	Input: 15-pin HD Female Input Connector	Input: Input Cable Included	Input: Automatic Sync Stripping	Input: Sync on Green Output	Output: Horizontal Centering	Output: Vertical Centering	Centering: Rack	Centering: Desktop / Tabletop	Mounting: Under / Through Desk or Table	Mounting: Wall / Furniture	Mounting: Floorbox Versions	Mounting: Audio Interface	Special Features: LCD Scan Rate Readout	Special Features: AAP – Architectural Adapter Plates	Special Features: Additional A/V Input Access	Special Features: ADSP™	Special Features: DDSP™	Special Features: Gain / Level Control (Brightness)	Special Features: Peaking Control (Sharpness)	Special Features: Memory	Special Features: RS-232 Control	Special Features: Internal Power Supply	Special Features: International Versions
RGB 109xi	300	•				•	•	•	•	•			•	•			•	•			•	•	3	3	15		•		
RGB 112xi	300			•			•	•	•	•			•	•			•	•			•	•	3	3	15		•		
RGB 160xi	300	•	•	•		•		•	•	•			•	•			•				•	•	3	3	15		•		
RGB 164xi (2) RGBHV outputs	300	•	•	•		•		•	•	•		•	•	•			•				•	•	3	3	15		•		
RGB 168xi	300	•	•	•		•		•	•	•		•	•	•			•		•		•	•	3	3	15		•		
RGB 190F	300	•	•	•		•	•		•	•			•	•								•	2	2	15				
RGB 192	300	•	•	•		•	•		•	•			•	•			•					•	2	2	15				
RGB 201Rxi	300	•	•	•		•		•	•	•	•	•	•				•	•			•	•	VAR	VAR	30	•	•		
RGB 202Rxi	300	•	•	•	2			•	•	•	•	•	•	•			•	•			•	•	VAR	VAR	30	•	•		
RGB 203Rxi	300	•	•	•		3		•	•	•	•	•	•	•			•	•			•	•	VAR	VAR	30	•	•		
RGB 203Rxi VTG	300	•	•	•		3		•	•	•	•	•	•	•			•	•			•	•	VAR	VAR	30	•	•		
RGB 460xi	300	•	•	•		•			•	•					•	SC	•				•	•	3	3	§			•	
RGB 460xi Dual	300	•	•	•		2			•	•					•		•				•	•	3	3	§				
RGB 464xi	300	•	•	•		•			•	•					•	SC	•			•	•	•	3	3	§				
RGB 468xi	300	•	•	•		•			•	•					•	SC	•		•		•	•	3	3	§			•	
RGB 468 Mxi	300	•	•	•		•			•	•					•	SC	•		M		•	•	3	3	§				
RGB 472xi	300	•	•	•		2			•	•					•	SC	•				•	•	3	3	2			•	
RGB 474xi	300	•	•	•		2			•	•					•	SC	•			•	•	•	3	3	2				
RGB 478xi	300	•	•	•		2			•	•					•	SC	•		•		•	•	3	3	2			•	
RGB 478 Mxi	300	•	•	•		2			•	•					•	SC	•		M		•	•	3	3	2				
RGB 560 AKM *	300	•	•	•		•			•	•						•	•				•	•	3	3	•			•	
RGB 580xi	300	•	•	•		•		•	•	•				•			•		•		•	•	VAR	VAR	15	•	•		
CIA111	400	•	•	•		•			•	•					•		•		M					VAR					
CIA111AM	400	•	•	•		•			•	•						AM	•		M					VAR				•	
CIA112	400	•	•	•		2			•	•					•		•		M					VAR					
CIA114	400	•	•	•		•			•	•					•		•							VAR					
CIA114AM	400	•	•	•		•			•	•						AM	•							VAR				•	
CIA114F5	400	•	•	•		•			•	•						SC	•							VAR					
CIA116	400	•	•	•		•			•	•					•		•		M					VAR					
IN2118	400	•	•	•		•			•	•				•			•		M								•	•	

Interface Cross Reference Legend

- • = Product has feature
- * = The RGB 560 AKM is for installation into Ackermann GES9B floor boxes
- § = The interface retains the last signal used in memory
- AM = The CIA111AM and CIA114AM are for installation into Ackermann GB3 floor boxes
- SC = SC floorbox versions are for installation into Steel City AFM Series floor boxes or FSR FL Series
- M = Mini AAP
- VAR = Variable

RGB 109xi

Dedicated VGA–UXGA Interface with ADSP™

DESCRIPTION

The Extron **RGB 109xi** with ADSP is a dedicated computer-video interface with a 15-130 kHz scanning range, 300 MHz (-3dB) of RGB video bandwidth, and a 15-pin HD connector. It is compatible with VGA–UXGA, Mac G3 and Mac G4 display signals and will convert computer-generated, unbalanced audio to balanced, line level audio. Sync processing is achieved through Extron's exclusive Advanced Digital Sync Processing (ADSP) technology, ensuring compatibility with digital display devices such as DLP, LCD, D-ILA™/LCoS, plasma, etc.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Active PC audio to balanced audio interfacing
- Three-position level/peaking switch
- Horizontal centering control
- Sync on green output (DIP switch-selectable)
- Automatic sync stripping from red, green, and blue
- Serration pulse removal (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- ID bit termination on pins 4 and 11
- Internal international power supply
- Rugged metal enclosure

MODEL	PART #
RGB 109xi	**60-289-01**

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)

SPECIFICATIONS

VIDEO

Gain	Unity (0.7V), (0.725V p-p) 50% peaking, (0.75V p-p) 100% peaking
Bandwidth	300 MHz (-3dB)

VIDEO INPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors	(1) 15-pin HD male, 48" long cable
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	Autoscan 15 kHz to 130 kHz
Vertical frequency	Autoscan 30 Hz to 120 Hz
Return loss	<-30dB @ 5 MHz
Maximum DC offset	4.0V

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 BNC female (1) 15-pin HD female local monitor output (buffered)
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.75V p-p with 0.70V p-p input
Impedance	75 ohms
Return loss	-30dB @ 5 MHz

SYNC

Input type	RGBHV TTL (±), RGBS TTL (±), RGsB 0.3V (-), RsGsBs 1.3V (-)
Output type	RGBHV (±), RGBS(±), RGsB (-)
Input level	2.0V to 5.5V p-p with ±0.2VDC offset (max.)
Output level	4.0V to 5.0V p-p, unterminated
Input impedance	10 kohms
Output impedance	75 ohms
Max. propagation delay	48 ns
Max. rise/fall time	3.5 ns
Polarity	
RGBHV	when RGBHV is input, polarity follows input; otherwise negative
RGBS, RGsB	negative

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (14dBu), balanced
Stereo channel separation	>95dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 PC level stereo, unbalanced
Connectors	(1) 3.5 mm stereo plug, 24" cable from computer video connector; tip (L), ring (R), sleeve (ground)
Impedance	>10 kohms, unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu, (unbalanced) at 1%THD+N

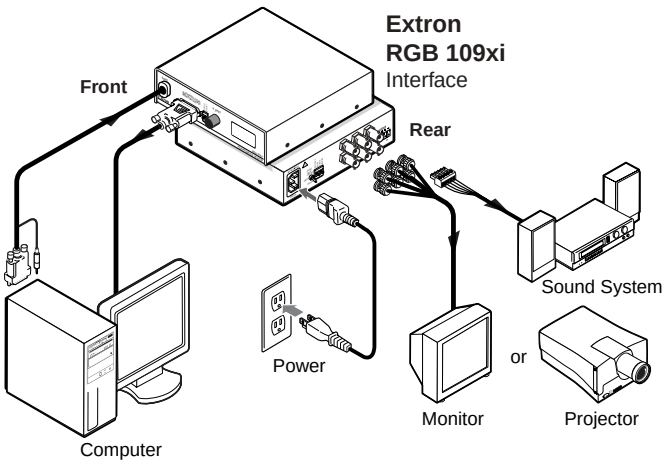
AUDIO OUTPUT

Number/signal type	1 stereo (2 channel), balanced/unbalanced
Connector	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	> +14dBm, balanced at stated %THD+N

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 15 watts, internal, autoswitchable
Rack mount	No
Furniture mount	Yes, with optional kits #70-077-01 (under-desk) and #70-077-02 (through-desk)
Enclosure type	Metal
Enclosure dimensions	1.75" H x 6.4" W x 6.0" D 4.4 cm H x 16.3 cm W x 15.2 cm D (Depth excludes connectors.)
Product weight	1.8 lbs (0.8 kg)
Shipping weight	4 lbs (1.8 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A
Warranty	3 years parts and labor

APPLICATION



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RGB 112xi

Dedicated 13W3 Workstation (Sun/SGI/IBM PowerPC) Interface with ADSP™

DESCRIPTION

The Extron **RGB 112xi** with ADSP is a dedicated 13W3 workstation computer-video interface with a 15-130 kHz scanning range and 300 MHz (-3dB) of RGB video bandwidth. It is compatible with Sun®, SGI, NeXT, Solbourne, HP, DEC, and IBM's PowerPC computers and will convert computer-generated, unbalanced audio to balanced, line level audio. Sync processing is achieved through Extron's exclusive Advanced Digital Sync Processing (ADSP) technology, ensuring compatibility with digital display devices such as DLP, LCD, D-ILA™/LCoS, plasma, etc.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Active PC audio to balanced audio interfacing
- Three-position level/peaking switch
- Horizontal centering control
- Sync on green output (DIP switch-selectable)
- Automatic sync stripping from red, green, and blue
- Serration pulse removal (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- LCD display of horizontal and vertical frequencies
- Internal international power supply
- Rugged metal enclosure

MODEL	PART #
RGB 112xi	**60-282-01**

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)
SUN-TCMFA adapter with pass-thru .....26-344-01 (page 417)

SPECIFICATIONS

VIDEO

Gain	Unity (0.7V), (0.725V p-p) 50% peaking, (0.75V p-p) 100% peaking
Bandwidth	300 MHz (-3dB)

VIDEO INPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors	(1) 13W3 male, 48" long cable
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	Autoscan 15 kHz to 130 kHz
Vertical frequency	Autoscan 30 Hz to 120 Hz
Return loss	<-30dB @ 5 MHz
Maximum DC offset	4.0V

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 BNC female (1) 13W3 female local monitor output (buffered)
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.75V p-p with 0.70V p-p input
Impedance	75 ohms
Return loss	-30dB @ 5 MHz

SYNC

Input type	RGBHV TTL (±), RGBS TTL (±), RGsB 0.3V (-), RsGsBs 1.3V (-)
Output type	RGBHV (±), RGBS(±), RGsB (-)
Input level	2.0V to 5.5V p-p with ±0.2VDC offset (max.)
Output level	4.0V to 5.0V p-p, unterminated
Input impedance	10 kohms
Output impedance	75 ohms
Max. propagation delay	48 ns
Max. rise/fall time	3.5 ns
Polarity	
RGBHV	when RGBHV is input, polarity follows input; otherwise negative
RGBS, RGsB	negative

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (14dBu), balanced
Stereo channel separation	>95dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 PC level stereo, unbalanced
Connectors	(1) 3.5 mm stereo plug, 24" cable from computer video connector; tip (L), ring (R), sleeve (ground)
Impedance	>10 kohms, unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu, (unbalanced) at 1%THD+N

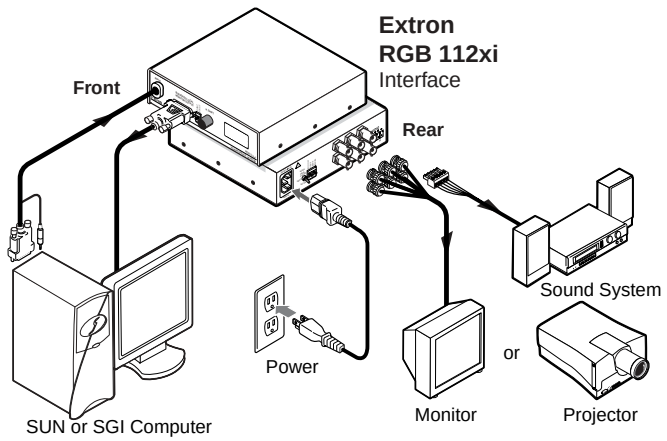
AUDIO OUTPUT

Number/signal type	1 stereo (2 channel), balanced/unbalanced
Connector	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	> +14dBm, balanced at stated %THD+N

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 15 watts, internal, autoswitchable
Rack mount	No
Furniture mount	Yes, with optional kits #70-077-01 (under-desk) and #70-077-02 (through-desk)
Enclosure type	Metal
Enclosure dimensions	1.75" H x 6.4" W x 6.0" D 4.4 cm H x 16.3 cm W x 15.2 cm D (Depth excludes connectors.)
Product weight	1.9 lbs (0.9 kg)
Shipping weight	4 lbs (1.8 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A
Warranty	3 years parts and labor

APPLICATION



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RGB 160xi

Universal, Female 15-pin HD Input, Mountable Interface with Audio and ADSP™

DESCRIPTION

The Extron **RGB 160xi** with ADSP is a universal, analog computer-video interface with a female 15-pin HD input and buffered local monitor output. The RGB 160xi has a 15-130 kHz scanning range and 300 MHz (-3dB) RGB video bandwidth. It is compatible with VGA–UXGA, Mac, Sun®, and SGI signals and will convert computer-generated, unbalanced audio to balanced, line level audio. The RGB 160xi features sync processing through Extron's exclusive Advanced Digital Sync Processing (ADSP) technology, ensuring compatibility with digital displays such as DLP, LCD, D-ILA™/LCoS, plasma, etc.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Active PC audio to balanced audio interfacing
- Three-position level/peaking switch
- Horizontal shift control
- Simultaneous output of composite and separate H&V sync
- Sync on green output (DIP switch-selectable)
- Automatic sync stripping from red, green, and blue
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- Two-color LED indicates power standby and signal present
- ID bit termination on pins 4 and 11
- Internal international power supply
- Rugged metal enclosure

MODEL	PART #
RGB 160xi	**60-378-01**

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)
VGAM 6' (1.83 m) MHRA cable w/ audio ....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
3.5 mm stereo plug 10-306-01

SPECIFICATIONS

VIDEO

Gain	Unity, (0.725V p-p) 50% peaking, (0.75V p-p) 100% peaking
Bandwidth	300 MHz (-3dB)

VIDEO INPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors	(1) 15-pin HD female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	Autoscan 15 kHz to 130 kHz
Vertical frequency	Autoscan 30 Hz to 120 Hz
Return loss	-30dB @ 5 MHz
Maximum DC offset	4.0V

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 BNC female (1) 15-pin HD female local monitor buffered output
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.75V p-p with 0.70V p-p input
Impedance	75 ohms
Return loss	-30dB @ 5 MHz

SYNC

Input type	RGBHV TTL (±), RGBS TTL (±), RGsB 0.3V (-), RsGsBs 1.3V (-)
Output type	RGBHV (±), RGBS(±), RGsB (-)
Input level	2V to 5.5V p-p with ±0.2VDC offset (max.)
Output level	4V to 5V p-p
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	48 ns
Max. rise/fall time	3.5 ns
Polarity	
RGBHV	when RGBHV is input, polarity follows input; otherwise negative
RGBS, RGsB	negative

AUDIO

Gain	Unbalanced output: 0dB; balanced output +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>72dB, at the rated maximum output (14dBu), balanced
Stereo channel separation	>66dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 PC level stereo, unbalanced
Connectors	(1) 3.5 mm stereo jack, 2 channel; tip (L), ring (R), sleeve (ground)
Impedance	5 kohms, DC coupled
Nominal level	-10dBV (316mVrms)
Maximum level	+4.2dBu, (unbalanced) at 1%THD+N

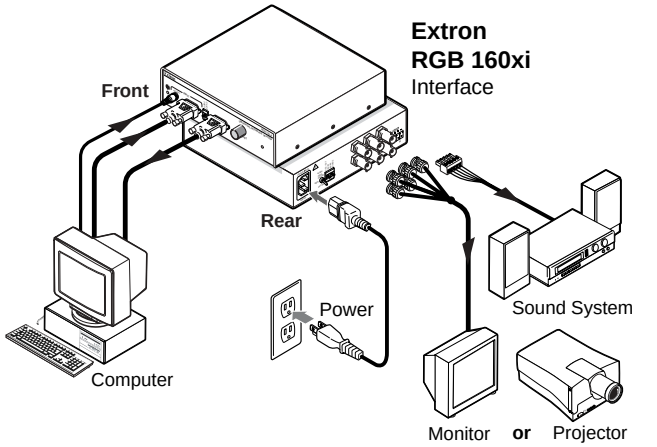
AUDIO OUTPUT

Number/signal type	1 stereo (2 channel), balanced/unbalanced
Connectors	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	>+8.8dBm, balanced at stated %THD+N

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 15 watts, internal, autoswitchable
MBC power jack	9.0VDC, 150 mA
Rack mount	No
Furniture mount	Yes, with optional kits, #70-077-01 and #70-077-02
Enclosure type	Metal
Enclosure dimensions	1.75" H x 6.4" W x 6.0" D 4.4 cm H x 16.3 cm W x 15.2 cm D (Depth excludes connectors.)
Product weight	1.4 lbs (0.6 kg)
Shipping weight	3 lbs (1.4 kg)
Listings/Compliances	UL, CE, FCC Class A
Warranty	3 years parts and labor

APPLICATION



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RGB 164xi

Dual Output, Universal Mountable Computer Interface with Audio and ADSP™

DESCRIPTION

The Extron **RGB 164xi** with ADSP is a universal, analog computer-video interface with two sets of BNC outputs, a female 15-pin HD input, and buffered local monitor output. It has a 15-130 kHz scanning range, 300 MHz (-3dB) RGB video bandwidth, and is compatible with VGA–UXGA, Mac, Sun®, and SGI signals. The RGB 164xi also converts computer-generated, unbalanced audio to balanced line-level audio. Sync processing is achieved through Extron's exclusive Advanced Digital Sync Processing (ADSP) technology, ensuring compatibility with digital display devices such as DLP, LCD, D-ILA™/LCoS, plasma, etc. The 1U, half rack rugged metal enclosure can be mounted in a rack, as well as under or through a desk utilizing optional mounting brackets.

FEATURES

- Two individually buffered RGBHV outputs allow connection of two presentation devices at once
- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Active PC audio to balanced audio interfacing
- Three-position level/peaking switch
- Horizontal shift control
- Simultaneous output of composite and separate H&V sync
- Sync on green output (DIP switch-selectable)
- Automatic sync stripping from red, green, and blue
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- Two-color LED indicates power standby and signal present
- Internal international power supply
- Rugged metal enclosure

MODEL	PART #
RGB 164xi	**60-485-01**

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)
1U rack shelf .....60-190-01 (page 445)
VGAM 6' (1.83 m) MHRA cable w/ audio ....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
3.5 mm stereo plug 10-306-01

SPECIFICATIONS

VIDEO

Gain ..... Unity, (0.725V p-p) 50% peaking, (0.75V p-p) 100% peaking
Bandwidth ..... 300 MHz (-3dB)

VIDEO INPUT

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors ..... (1) 15-pin HD female
Nominal level..... 0.7V p-p for RGB
Minimum/maximum levels ..... Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance ..... 75 ohms
Horizontal frequency ..... Autoscan 15 kHz to 130 kHz
Vertical frequency ..... Autoscan 30 Hz to 120 Hz
Return loss ..... -30dB @ 5 MHz
Maximum DC offset..... 4.0V

VIDEO OUTPUT

Number/signal type ..... 2 analog RGBHV, RGBS, RGsB
Connectors ..... 2 x 6 BNC female
(1) 15-pin HD female local monitor buffered output
Nominal level..... 0.7V p-p for RGB
Minimum/maximum levels ..... Analog: 0.7V to 0.75V p-p with 0.70V p-p input
Impedance ..... 75 ohms
Return loss ..... -30dB @ 5 MHz

SYNC

Input type ..... RGBHV TTL (±), RGBS TTL (±), RGsB 0.3V (-), RsGsBs 1.3V (-)
Output type..... RGBHV (±), RGBS(±), RGsB (-)
Input level ..... 2V to 5.5V p-p with ±0.2VDC offset (max.)
Output level ..... 4V to 5V p-p
Input impedance ..... 510 ohms
Output impedance ..... 75 ohms
Max. propagation delay..... 48 ns
Max. rise/fall time ..... 3.5 ns
Polarity
RGBHV ..... when RGBHV is input, polarity follows input; otherwise negative
RGBS, RGsB ..... negative

AUDIO

Gain ..... Unbalanced output: 0dB; balanced output +6dB
Frequency response ..... 20 Hz to 20 kHz, ±0.05dB
THD + Noise ..... 0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N ..... >72dB, at the rated maximum output (14dBu), balanced
Stereo channel separation ..... >66dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type ..... 1 PC level stereo, unbalanced
Connectors ..... (1) 3.5 mm stereo jack, 2 channel; tip (L), ring (R), sleeve (ground)
Impedance ..... 5 kohms, DC coupled
Nominal level..... -10dBV (316mVrms)
Maximum level ..... +4.2dBu, (unbalanced) at 1%THD+N

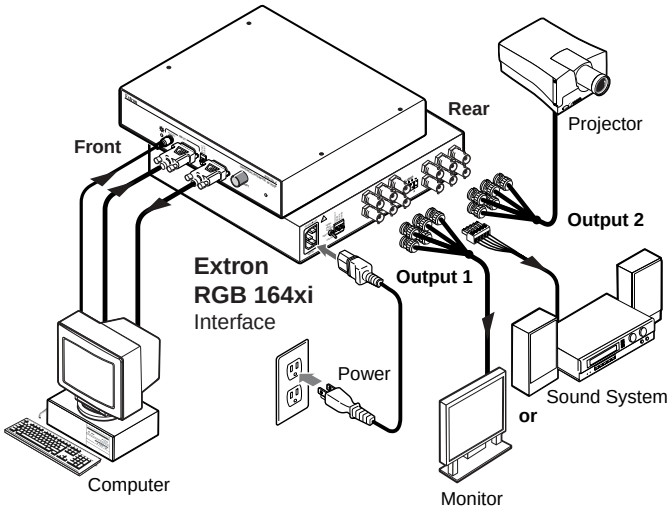
AUDIO OUTPUT

Number/signal type ..... 1 stereo (2 channel), balanced/unbalanced
Connectors ..... (1) 3.5 mm captive screw connector, 5 pole
Impedance ..... 50 ohms unbalanced, 100 ohms balanced
Gain error ..... ±0.1dB channel to channel
Maximum level (600 ohm) ..... >+8.8dBm, balanced at stated %THD+N

GENERAL

Power ..... 100VAC to 240VAC, 50/60 Hz, 15 watts, internal, autoswitchable
MBC power jack ..... 9.0VDC, 150 mA
Rack mount..... Yes, with optional rack shelf, #60-190-01
Furniture mount..... Yes, with optional kits, #70-077-01 and #70-077-02
Enclosure type ..... Metal
Enclosure dimensions..... 1.75" H x 8.75" W x 6.0" D (1U high, half rack width)
4.4 cm H x 22.2 cm W x 15.2 cm D
(Depth excludes connectors.)
Product weight ..... 1.7 lbs (0.8 kg)
Shipping weight ..... 4 lbs (1.8 kg)
Listings/Compliances ..... UL, CE, FCC Class A
Warranty ..... 3 years parts and labor

APPLICATION



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RGB 168xi

Universal, Female 15-pin HD Input, Mountable Interface with Audio, ADSP™, and AAP Openings

DESCRIPTION

The Extron **RGB 168xi** with ADSP is a universal, analog computer-video interface with a female 15-pin HD input, buffered local monitor output, an unswitched AC outlet, and optional Architectural Adapter Plate (AAP) openings for cable pass-through connectors. These plates affix to the front panel of the interface and allow various connectors to be attached while cables pass through the rear of the enclosure.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Active PC audio to balanced audio interfacing
- Three-position level/peaking switch
- Horizontal shift control
- Simultaneous output of composite and separate H&V sync
- Sync on green output (DIP switch-selectable)
- Automatic sync stripping from red, green, and blue
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- Internal international power supply
- Unswitched AC outlet, 600 watts max.
- Three double space AAP openings for signal pass-through connectors (two front and one rear panel AAP)
- Rack/through-desk mounting hardware included

MODEL	PART #
RGB 168xi	**60-379-01**

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
VGAM 6' (1.83 m) MHRA cable w/ audio ....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
Architectural Adapter Plates .....assorted (page 96)
3.5 mm stereo plug 10-306-01

SPECIFICATIONS

VIDEO

Gain ..... Unity, (0.725V p-p) 50% peaking, (0.75V p-p) 100% peaking
Bandwidth ..... 300 MHz (-3dB)

VIDEO INPUT

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors ..... (1) 15-pin HD female
Nominal level..... 0.7V p-p for RGB
Minimum/maximum levels ..... Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance ..... 75 ohms
Horizontal frequency ..... Autoscan 15 kHz to 130 kHz
Vertical frequency ..... Autoscan 30 Hz to 120 Hz
Return loss ..... -30dB @ 5 MHz
Maximum DC offset..... 4.0V

VIDEO OUTPUT

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB
Connectors ..... 6 BNC female
(1) 15-pin HD female local monitor buffered output
Nominal level..... 0.7V p-p for RGB
Minimum/maximum levels ..... Analog: 0.7V to 0.75V p-p with 0.70V p-p input
Impedance ..... 75 ohms
Return loss ..... -30dB @ 5 MHz

SYNC

Input type ..... RGBHV TTL (±), RGBS TTL (±), RGsB 0.3V (-), RsGsBs 1.3V (-)
Output type..... RGBHV (±), RGBS(±), RGsB (-)
Input level ..... 2V to 5.5V p-p with ±0.2VDC offset (max.)
Output level ..... 4V to 5V p-p
Input impedance ..... 510 ohms
Output impedance ..... 75 ohms
Max. propagation delay ..... 48 ns
Max. rise/fall time ..... 3.5 ns
Polarity
RGBHV ..... when RGBHV is input, polarity follows input; otherwise negative
RGBS, RGsB ..... negative

AUDIO

Gain ..... Unbalanced output: 0dB; balanced output +6dB
Frequency response ..... 20 Hz to 20 kHz, ±0.05dB
THD + Noise ..... 0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N ..... >72dB, at the rated maximum output (14dBu), balanced
Stereo channel separation ..... >66dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type ..... 1 PC level stereo, unbalanced
Connectors ..... (1) 3.5 mm stereo jack, 2 channel; tip (L), ring (R), sleeve (ground)
Impedance ..... 5 kohms, DC coupled
Nominal level..... -10dBV (316mVrms)
Maximum level ..... +4.2dBu, (unbalanced) at 1%THD+N

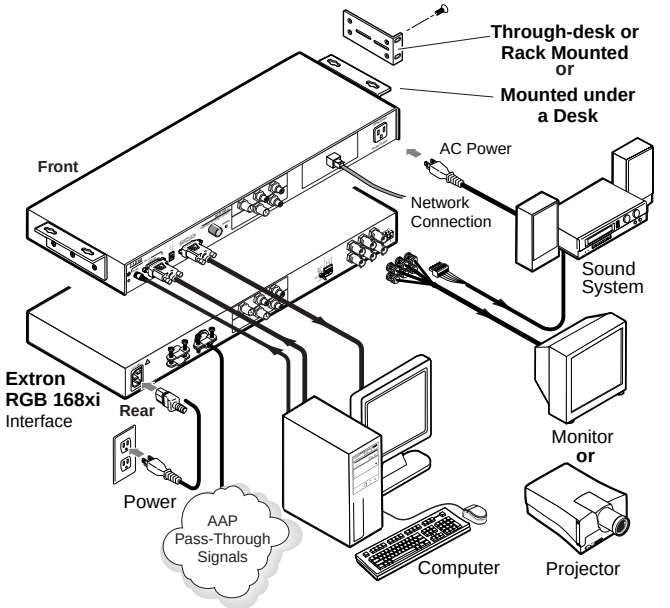
AUDIO OUTPUT

Number/signal type ..... 1 stereo (2 channel), balanced/unbalanced
Connectors ..... (1) 3.5 mm captive screw connector, 5 pole
Impedance ..... 50 ohms unbalanced, 100 ohms balanced
Gain error ..... ±0.1dB channel to channel
Maximum level (600 ohm) ..... >+8.8dBm, balanced at stated %THD+N

GENERAL

Power ..... 100VAC to 240VAC, 50/60 Hz, 15 watts, internal, autoswitchable
MBC power jack ..... 9.0VDC, 150 mA
Rack mount..... Yes, with included kit, #70-077-03
Furniture mount..... Yes, with optional kit, #70-077-01 (under desk), or included kit #70-077-03 (through desk/rack mount)
Enclosure type ..... Metal
Enclosure dimensions..... 1.75" H x 17.5" W x 6.0" D (1U high, full rack width)
4.4 cm H x 44.5 cm W x 15.2 cm D
(Depth excludes connectors and knobs. Width excludes rack ears.)
Product weight ..... 3.5 lbs (1.6 kg)
Shipping weight ..... 7 lbs (3.2 kg)
Listings/Compliances ..... UL, CE, FCC Class A
Warranty ..... 3 years parts and labor

APPLICATION



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CIA116

Table/Rack-Mountable Computer-Video Interface with MAAP Openings

CIA116-1

DESCRIPTION

The Inline **CIA116** is an analog computer-video interface that features a female 15-pin input with audio, a buffered local monitor output, two unswitched AC outlets, and openings for up to four Mini Architectural Adapter Plates (MAAPs). There are over 75 MAAPs available to meet virtually any signal connection requirement. The CIA116 has a 30-120 kHz scanning rate, 400 MHz (-3dB) RGB video bandwidth, and is compatible with a wide variety of analog video signals including VGA–UXGA, Mac, Sun®, and SGI signals. It will also convert computer-generated, unbalanced audio to balanced, line level audio.

FEATURES

- 400 MHz (-3dB) RGB video bandwidth
- Variable Peaking
- Active PC audio to balanced audio interfacing
- Horizontal shift control
- Video hum suppression (differential input)
- One-button monitor emulation
- Openings for up to four Mini Architectural Adapter Plates (MAAPs)
- Two front panel unswitched AC outlets: Edison (USA), IEC or Europlug
- Mounts under table, podium, or other flat surface using provided brackets
- Mounts in 1U rack space using optional rack ears
- Available in black or white finish
- Internal international power supply

MODEL	PART #
CIA116 Edison AC outlet (black)	CIA116-1
CIA116 Edison AC outlet (white)	CIA116-2
CIA116 Europlug AC outlet (black)	CIA116-3
CIA116 Europlug AC outlet (white)	CIA116-4
CIA116 IEC AC outlet (black)	CIA116-5
CIA116 IEC Europlug AC outlet (white)	CIA116-6

OPTIONAL ACCESSORIES

Through-desk mount kit	IN9253	(page 444)
Rack-mount ears – Holds 4 MAAPs	IN9254	(page 444)
Rack-mount ears	IN9255	(page 444)
VGAM 6' (1.83m) MHRA cable w/audio	26-490-02	(page 401)
Mac adapter 15-HDM kit w/audio	70-156-01	(page 420)
13W3 adapter 15-HDM kit w/audio	70-157-03	(page 420)
Mini Architectural Adapter Plates	assorted	(page 117)

SPECIFICATIONS

VIDEO

Gain	Unity
Bandwidth	400 MHz (-3dB)

VIDEO INPUT AND LOCAL MONITOR OUTPUT

Number/signal type	1 VGA–UXGA, Mac, Sun RGBHV, RGBS, RGsB* 1 buffered local monitor output identical to the input
Connectors	2 female 15-pin HD
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	30 kHz to 130 kHz
Vertical frequency	30 Hz to 120 Hz
Return loss	<-40dB @ 5 MHz

**No sync on green stripping – RGsB input signals are always output as RGsB*

VIDEO OUTPUT

Number/signal type	1 RGBHV, RGBS, RGsB
Connectors	5 BNC female on 4" (10.2 cm) pigtails
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p
Impedance	75 ohms
Return loss	<-45dB @ 5 MHz
DC offset	±8mV maximum with input at 0 offset

SYNC

Input type	RGBHV, RGBS, RGsB
Output type	RGBHV, RGBS, RGsB
Input level	2.0V to 5.0V p-p
Output level	TTL: 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	1.8 µs
Max. rise/fall time	1 ns
Polarity	Positive or negative (follows input)

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.5dB
THD + Noise	0.005% @ 1 kHz at nominal level
S/N	>70dB at rated maximum output
Stereo channel separation	>-110dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 stereo, unbalanced
Connectors	(1) 3.5 mm mini stereo jack
Impedance	>10 kohms unbalanced
Nominal level	-10dBV (316mV)
Maximum level	+8.3dBu, (balanced or unbalanced) at 1%THD+N

AUDIO OUTPUT

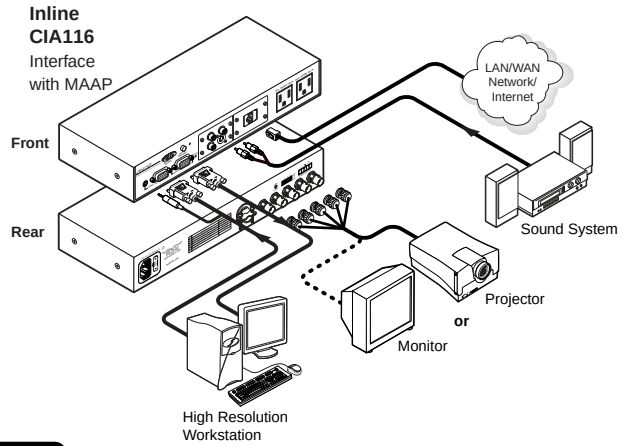
Number/signal type	1 stereo, balanced/unbalanced
Connectors	1 captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 50 ohms balanced
Gain error	±0.06dB channel to channel
Maximum level (Hi-Z)	>+15dBu, balanced or unbalanced at stated %THD+N
Maximum level (600 ohm)	>+13dBm, balanced or unbalanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	
CIA116-1, -2	125VAC, 50/60 Hz, 10 watts, internal
CIA116-3, -4, -5, -6	250VAC, 50/60 Hz, 8 watts, internal
Rack mount	Yes, with optional brackets, and also furniture mountable with either included or optional brackets
Enclosure type	Metal
Enclosure dimensions	1.75" H x 11.75" W x 4.75" D (1U high, two-thirds rack width) 4.4 cm H x 29.8 cm W x 12.1 cm D (Depth excludes connectors and knobs. Width excludes rack ears and other brackets.)
Product weight	2 lbs (0.9 kg)
Shipping weight	4 lbs (2 kg)
Listings/Compliances	ETL (UL1950), CE
Warranty	3 years parts and labor

APPLICATION



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RGB 190F & RGB 192

Universal Analog Computer-Video Interfaces

RGB 190F

RGB 192

DESCRIPTION

The Extron **RGB 190F** and **RGB 192** are universal, analog computer-video interfaces each with a female 15-pin HD input connector and a 15-pin HD buffered local monitor output. The RGB 192 also converts computer-generated, unbalanced audio to balanced, line level audio. Both models have a 15-150 kHz scanning range, 300 MHz (-3dB) RGB video bandwidth, and are compatible with nearly every computer-video signal, including VGA–UXGA, Mac, Sun®, and SGI. ID bit termination is provided on pins 4 and 11 of its 15-pin HD input, ensuring that computers requiring local monitors to operate will do so in the event that one is not attached.

For PCs, the RGB 190FV ships with a 6 foot 15-pin HD male-to-male cable. For Macintoshes with 15-pin D connector video outputs, the RGB 190FM provides 15-pin D to 15-pin HD adapter cables for input and local monitor output. For Sun, SGI, and IBM Power PC workstations, the RGB 190FS provides 13W3 to 15-pin HD adapter cables for input and local monitor output.

There are two models of the RGB 192: the RGB 192V for PCs and the RGB 192S for Sun, SGI, and IBM Power PC workstations. Optional adapters are available for Mac to VGA connection to the RGB 192. Both models come in compact, rugged metal enclosures and include an under-surface mounting kit for mounting under a table or desk.

Both models feature horizontal shift control, simultaneous output of composite and separate H&V sync, sync on green output and serration pulse removal (both DIP switch-selectable), and Digital Display Sync Processing (DDSP), also DIP switch-selectable.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Two-position level/peaking switch
- External international power supply included (part # 70-055-01, see page 439)
- Rugged metal enclosure
- Mountable interface

Exclusive to the RGB 192

- Active PC audio to balanced audio interfacing
- Mono or stereo audio output

MODEL	PART #
RGB 190FV (PC version)	60-486-61
RGB 190FM (Mac version)	60-486-62
RGB 190FS (Sun/SGI version)	60-486-63
RGB 192V (PC version)	60-486-01
RGB 192S (Sun/SGI version)	60-486-02

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
VGAM 6' (1.83 m) MHRA cable w/audio ....26-490-02 (page 401)
3.5 mm stereo plug 10-306-01

SPECIFICATIONS

VIDEO

Gain	Unity (0.7V), (0.80V) 15% with 3dB peaking
Bandwidth	300 MHz (-3dB)
Rise time	1.5 ns

VIDEO INPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	(1) 15-pin HD female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3 to 1.45 volts p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	15 kHz to 130 kHz
Vertical frequency	30 Hz to 170 Hz
Return loss	-41dB @ 5 MHz
Maximum DC offset	4V

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 BNC female (1) 15-pin HD female (buffered local monitor output)
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.8V p-p (DIP switch-selectable) w/peaking
Impedance	75 ohms
Return loss	-45dB @ 5 MHz
DC offset	±5mV maximum with input at 0 offset

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RGB 190F & RGB 192 (continued)...

SYNC

Input type	RGBHV, RGBS, RGsB (accepts RGsB but does not strip sync from video)
Output type	RGBHV at all times RGBS at all times RGsB (switch-selectable)
Input level	2V p-p to 5.5V p-p with ±0.2VDC offset max.
Output level	4V to 5V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	57 ns
Max. rise/fall time	4 ns
Polarity	
RGBHV	when RGBHV is input, polarity follows input; otherwise negative
RGBS, RGsB	negative

AUDIO — RGB 192 ONLY

Gain	Unbalanced stereo or mono output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ± 0.05dB
THD + Noise	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (14dBm), balanced
Crosstalk	<-90dB @ 1 kHz
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT — RGB 192 ONLY

Number/signal type	1 stereo, unbalanced, or mono
Connectors	(1) 3.5 mm stereo jack (2 channel), unbalanced; tip (R), ring (L), sleeve (ground)
Impedance	>10 kohms, unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+9.5dBu at 1%THD+N

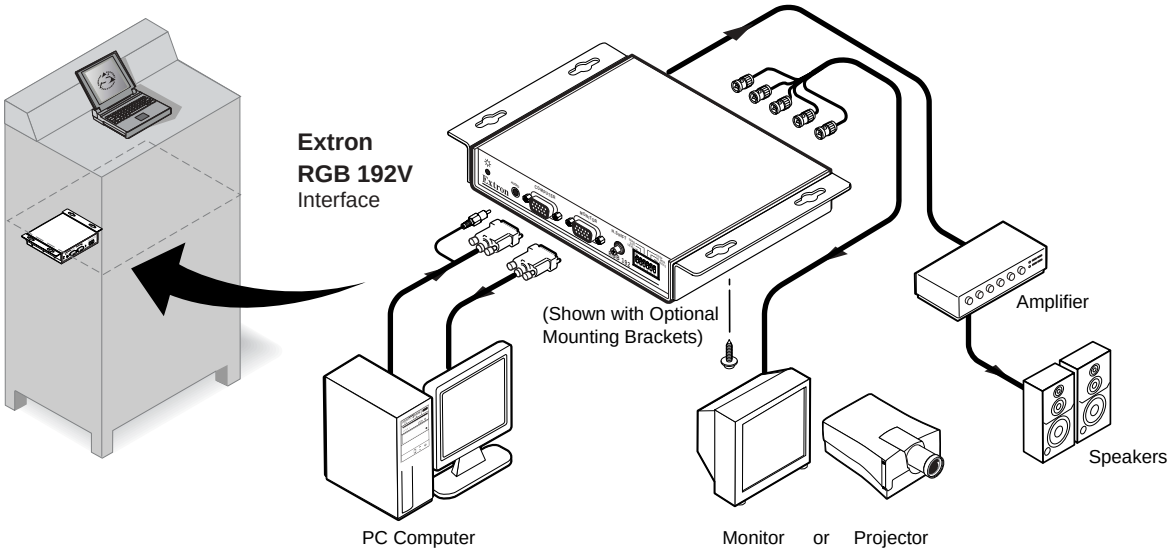
AUDIO OUTPUT — RGB 192 ONLY

Number/signal type	1 buffered, stereo (2 channel) or mono, balanced or unbalanced
Connectors	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (Hi-Z)	>+14dBm, balanced at stated %THD+N
Maximum level (600 ohm)	>+9dBm, balanced at stated % THD+N

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 3.2 watts, external, autoswitchable; to 12VDC, 1.0 A power supply (included). Product requires 0.35 A.
Rack mount	No, but furniture mountable with optional mounting brackets
Enclosure type	Metal
Enclosure dimensions	1.0" H x 5.7" W x 4.5" D 2.54 cm H x 14.48 cm W x 11.43 cm D (Depth excludes connectors.)
Product weight	3.5 lbs (1.6 kg)
Shipping weight	4 lbs (1.8 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty	3 years parts and labor

APPLICATION



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RGB 201 Rxi

Universal, Analog Interface with Audio and Enhanced ADSP™

SIS™ Simple Instruction Set

DESCRIPTION

The Extron **RGB 201 Rxi** is a universal, analog computer-video interface with audio that includes a female 15-pin HD input connector and a 15-pin HD buffered local monitor output. The RGB 201 Rxi is able to convert computer-generated, unbalanced audio to stereo or mono balanced line-level audio, and has 30 memory locations for recalling resolution/frequency signal settings. It is also equipped with Extron's Advanced Digital Sync Processing (ADSP) technology to ensure compatibility with digital displays such as DLP, LCD, D-ILA™/LCoS, plasma, etc. and a Digital Display Sync Processing (DDSP™) DIP switch to bypass sync processing and horizontal and vertical centering. The RGB 201 Rxi is ideal for classrooms, auditoriums, and conference rooms that require only one input.

With a 15-150 kHz scanning range and 300 MHz (-3dB) RGB video bandwidth, the RGB 201 Rxi is compatible with nearly every computer-video signal, including VGA–UXGA, Mac, Sun®, and SGI. Optional adapters for Mac to VGA and SUN/SGI to VGA connection are available. It is housed in a compact, 1U high, half rack width rugged metal enclosure and can be rack or under-desk mounted.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- 30 memory locations for automatic signal setup
- Buffered local monitor output
- Audio processing converts unbalanced audio for balanced line-level output (stereo or mono)
- Variable level and peaking
- Horizontal and vertical centering (in one-pixel increments) with memory
- LCD indicates signal frequency and resolution for easy troubleshooting
- Simultaneous output of composite sync and separate H&V sync
- Automatic sync stripping from red, green, and blue channels
- Sync on green output (DIP switch-selectable)
- Digital Display Sync Processing (DDSP), DIP switch-selectable
- Serration pulse removal (DIP switch-selectable)
- Choice of sync polarities (DIP switch-selectable)
- Choice of vertical sync pulse width
- Internal international power supply
- Vented, rack-mountable, rugged metal enclosure
- Digital Sync Validation Processing (DSVP™) confirms input sources are active by scanning horizontal and vertical sync inputs and communicates over RS-232

MODEL	PART #
RGB 201 Rxi	**60-507-01**

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)
VGAM 6' (1.83 m) MHRA cable w/ audio ....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
3.5 mm stereo plug 10-306-01
Interface kit case 21-009-01

SPECIFICATIONS

VIDEO

Gain	0.5V to 1.45V p-p
Bandwidth	300 MHz (-3dB)
Rise time	1.5 ns

VIDEO INPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors	(1) 15-pin HD female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	15 kHz to 150 kHz
Vertical frequency	40 Hz to 140 Hz
Return loss	<-30dB @ 5 MHz
Maximum DC offset	4V

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 BNC female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	0.3V to 1.30V p-p with 0.7V p-p nominal input level
Impedance	75 ohms
Return loss	-30dB @ 5 MHz
DC offset	±5mV maximum with input at 0 offset

SYNC

Input type	RGBHV, RGBS, RGsB, RsGsBs
Output type	RGBHV, RGBS, RGsB
Input level	2V to 5.5V p-p with ±0.2VDC offset max.
Output level	TTL: 4V to 5V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	85 ns
Max. rise/fall time	2 ns
Polarity	
RGBHV	tracks polarity (or force negative sync via internal jumper)
RGBS, RGsB	negative

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (17dBu), balanced
Crosstalk	<-90dB @ 1 kHz, fully loaded
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 PC level stereo, unbalanced
Connectors	(1) 3.5 mm stereo jack (female) (2 channel); tip (L), ring (R), sleeve (ground)
Impedance	>10 kohms, unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu, (balanced or unbalanced) at 1%THD+N

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RGB 201 Rxi (continued)...

AUDIO OUTPUT

Number/signal type	1 buffered stereo (2 channel) or mono, balanced/unbalanced
Connectors	(1) 3.5 mm, captive screw connector, 5-pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (Hi-Z)	>+14dBu, balanced at stated %THD+N
Maximum level (600 ohm)	>+8.5dBm, balanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

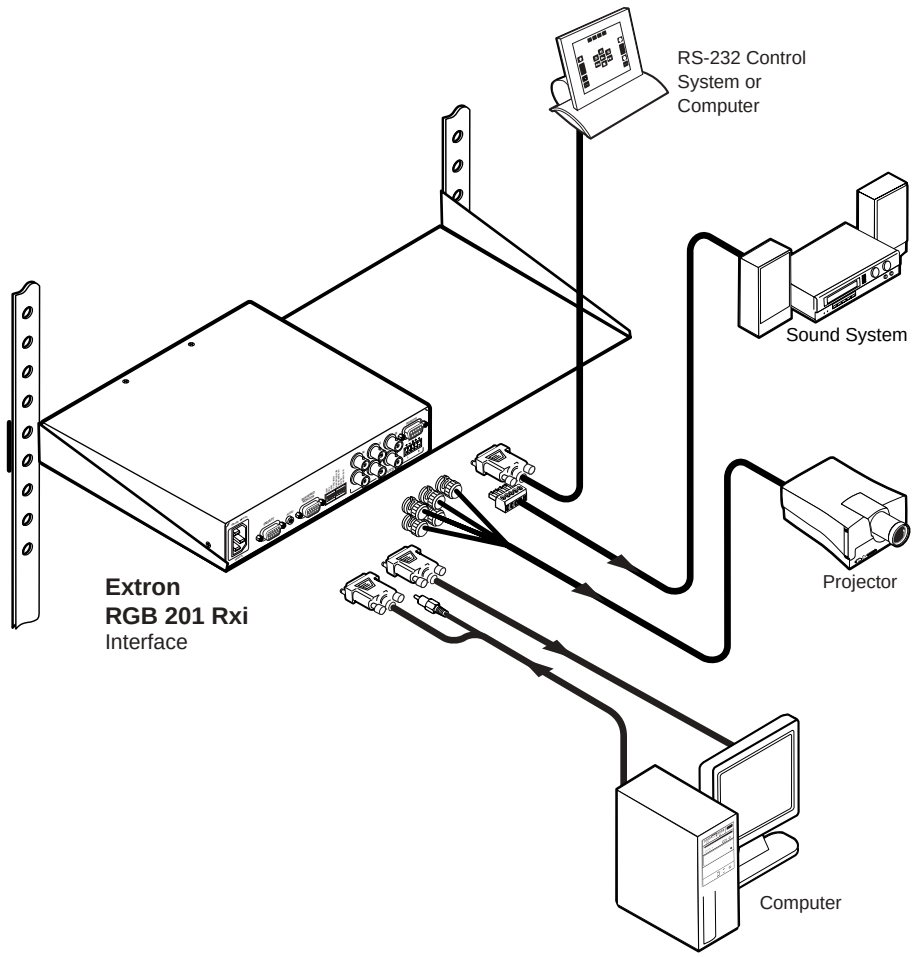
CONTROL/REMOTE — INTERFACE

Serial control port	RS-232, 9-pin female D connector
Program control	Extron's control program for Windows® Extron's Simple Instruction Set™ (SIS™)

GENERAL

Input power	100VAC to 240VAC, 50/60 Hz, 18 watts, internal, autoswitchable
Rack mount	Yes, with an optional rack shelf (part #60-190-01)
Furniture mount	Yes, with an optional under-desk mounting kit (part #70-077-01) or through-desk mounting kit (part #70-077-02)
Enclosure type	Metal, vented
Enclosure dimensions	1.75" H x 8.75" W x 8.0" D (1U high, half rack width) 4.4 cm H x 22.2 cm W x 20.3 cm D with rear BNCs, D = 8.4" (21.3 cm) (Depth excludes knobs.)
Product weight	2.2 lbs (1.0 kg)
Shipping weight	5 lbs (2.3 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty	3 years parts and labor

APPLICATION



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RGB 202 Rxi

Universal, Dual Input, Analog Interface with Audio and Enhanced ADSP™

SIS™ Simple Instruction Set

DESCRIPTION

The Extron **RGB 202 Rxi** is a rack-mountable, universal interface that combines two input switching with computer-video and audio interfacing capabilities, as well as RS-232 and contact closure control. The RGB 202 Rxi provides exceptional computer-video interfacing features and performance to eliminate almost all connection problems and line-driving limitations. It is compatible with VGA–UXGA, Mac, Sun®, SGI, and other computer-video signals. The RGB 202 Rxi is ideal for a wide range of applications due to its innovative features including: two input switching; compatibility with analog, ECL, or TTL signals; active audio interfacing; enhanced Advanced Digital Sync Processing (ADSP) that ensures compatibility with digital displays such as DLP, LCD, D-ILA™/LCoS, plasma, etc.; separate horizontal and vertical centering; variable level and peaking; and improved heat management to allow for various mounting configurations.

The RGB 202 Rxi is housed in a rack-mountable, compact, vented rugged metal enclosure. The RGB 202 Rxi may be mounted under or through a desk or other surface with the use of an optional under-desk or through-desk mounting kit.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- 30 memory locations for automatic signal setup
- Active PC audio to balanced audio interfacing
- Variable level and peaking
- Horizontal and vertical centering (in one-pixel increments) with memory for each input
- Easy-to-read LCD display indicates H&V sync rates
- Simultaneous output of composite sync and separate H&V sync
- Automatic sync stripping from red, green, and blue channels
- Switching control through front panel, RS-232, and contact closure
- Sync on green output (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- Serration pulse removal (DIP switch-selectable)
- Choice of sync polarities (DIP switch-selectable)
- Choice of vertical sync pulse widths (DIP switch-selectable)
- 75 ohm termination for either input (DIP switch-selectable)
- Two 9VDC, 2.5 mm, MBC power jacks
- Internal international power supply
- Vented, rack-mountable, rugged metal enclosure
- Optional kits for under-desk mounting or through-desk mounting

MODEL	PART #
RGB 202 Rxi	**60-327-01**

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)
1U rack shelf .....60-190-01 (page 445)

3.5 mm stereo plug 10-306-01

MBC & LBC cables.....assorted (page 49)

Interface kit case 21-009-01

SPECIFICATIONS

VIDEO

Routing	2 x 1 router
Gain	0.5V to 1.45V p-p
Bandwidth	300 MHz (-3dB)
Rise time	1.5 ns

VIDEO INPUT

Number/signal type	2 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors	(2) 9-pin D male for MBC/LBC cable or buffer
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance	75 ohms or high Z, switchable (set to 75 ohms if no local monitor is connected)
Horizontal frequency	15 kHz to 150 kHz
Vertical frequency	40 Hz to 140 Hz
Return loss	<-30dB @ 5 MHz
Maximum DC offset	4V

VIDEO SIGNAL CHARACTERISTICS — RGB 202 RXI VTG ONLY

Dot clock	VGA 25.18 MHz, Mac 30.04 MHz, SVGA 65.04 MHz, SGI 107.4 MHz
Pixel clock accuracy	> 99.02%
Scan rate accuracy	> 99.03%
Frequency range	
VGA	31.475 kHz x 60 Hz,
SVGA	37.879 kHz x 60 Hz,
XGA	48.392 kHz x 60 Hz,
SGI	63.928 kHz x 60 Hz
Rise/fall time	2.5 ns / 2.0 ns, measured

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 BNC female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	0.3V to 1.30V p-p with 0.7V p-p nominal input level
Impedance	75 ohms
Return loss	-30dB @ 5 MHz
DC offset	±5mV maximum with input at 0 offset

SYNC

Input type	RGBHV, RGBS, RGsB, RsGsBs
Output type	RGBHV, RGBS, RGsB
Input level	2V to 5.5V p-p with ±0.2VDC offset max.
Output level	TTL: 4V to 5V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	85 ns
Max. rise/fall time	2 ns
Polarity	
RGBHV	tracks polarity (or force negative sync via DIP switch)
RGBS, RGsB	negative

AUDIO

Routing	2 x 1 stereo router
Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (17dBu), balanced
Crosstalk	<-90dB @ 1 kHz, fully loaded
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

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RGB 202 Rxi (continued)...

AUDIO INPUT

Number/signal type	2 PC level stereo, unbalanced
Connectors	(2) 3.5 mm stereo jacks (female) (2 channel); tip (L), ring (R), sleeve (ground)
Impedance	>10 kohms, unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu, (balanced or unbalanced) at 1%THD+N

AUDIO OUTPUT

Number/signal type	1 buffered stereo (2 channel), balanced/unbalanced
Connectors	(1) 3.5 mm, captive screw connector, 5-pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (Hi-Z)	>+14dBu, balanced at stated %THD+N
Maximum level (600 ohm)	>+8.5dBm, balanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

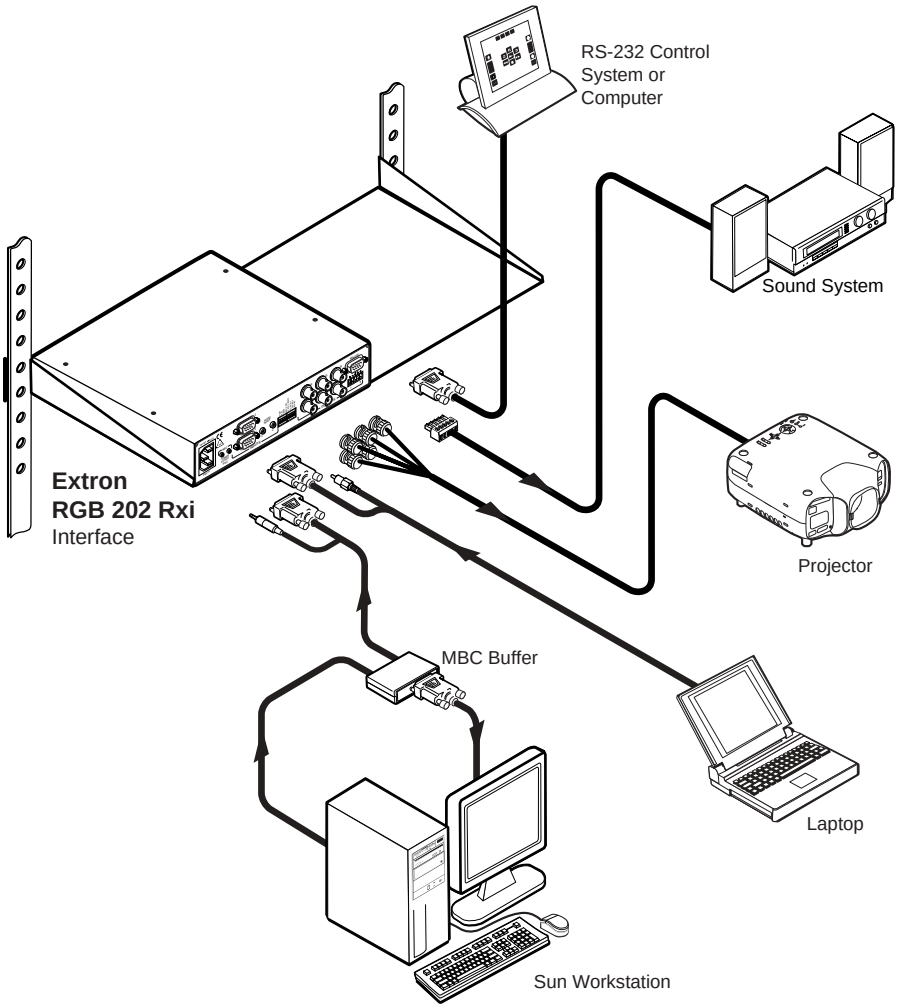
CONTROL/REMOTE — INTERFACE

Serial control port	RS-232, 9-pin female D connector (also used for contact closure)
Contact closure	1 9-pin female D connector (also used for RS-232)
Program control	Extron's control program for Windows® Extron's Simple Instruction Set™ (SIS™)

GENERAL

Input power	100VAC to 240VAC, 50/60 Hz, 18 watts, internal, autoswitchable
MBC power jacks	9.0VDC, 0.15A
Rack mount	Yes, with an optional rack shelf (part #60-190-01)
Furniture mount	Yes, with an optional under-desk mounting kit (part #70-077-01) or through-desk mounting kit (part #70-077-02)
Enclosure type	Metal, vented
Enclosure dimensions	1.75" H x 8.75" W x 8.6" D (1U high, half rack width) 4.4 cm H x 22.2 cm W x 21.8 cm D (Depth excludes knobs.)
Product weight	
RGB 202 Rxi	2.2 lbs (1.0 kg)
RGB 202 Rxi VTG	2.3 lbs (1.0 kg)
Shipping weight	5 lbs (2.3 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A
Warranty	3 years parts and labor

APPLICATION



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RGB 203 Rxi

Universal, Three Input, Analog Interface with Audio and Enhanced ADSP™

SIS™ Simple Instruction Set

DESCRIPTION

The Extron **RGB 203 Rxi** is a universal, three input, analog computer-video interface with audio that includes three female 15-pin HD input connectors and a 15-pin HD buffered local monitor output that can be fixed to input one or shared between all three by switch selection. Audio is available on two of the three inputs on 3.5 mm stereo audio jacks. Input selection can be autoswitched, or controlled through RS-232 or contact closure. Resolution/frequency signal settings can be recalled during switching or for new computer interfacing utilizing 30 memory locations. The RGB 203 Rxi is able to convert computer-generated, unbalanced audio to stereo or mono balanced line-level audio. It is also equipped with Extron's Advanced Digital Sync Processing (ADSP) technology to ensure compatibility with digital displays such as DLP, LCD, D-ILA™/LCoS, plasma, etc. The RGB 203 Rxi is ideal for classrooms, auditoriums, and conference rooms.

With a 15-150 kHz scanning range and 300 MHz (-3dB) RGB video bandwidth, the RGB 203 Rxi is compatible with nearly every computer-video signal, including VGA–UXGA, Mac, Sun®, and SGI. Optional adapters for Mac to VGA and SUN/SGI to VGA connections are available. It is housed in a compact, 1U high, half rack width rugged metal enclosure and can be rack or under-desk mounted.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Digital Sync Validation Processing (DSVP™) confirms input sources are active by scanning horizontal and vertical sync inputs and communicates over RS-232
- 30 memory locations for automatic signal setup
- Switch-selectable, buffered local monitor output locked to input one or follows output selected
- Audio processing converts unbalanced audio for balanced line-level output (stereo or mono)
- Variable level and peaking
- Horizontal and vertical centering (in one-pixel increments) with memory for each input
- LCD indicates signal frequency and resolution for easy troubleshooting
- Simultaneous output of composite sync and separate H&V sync
- Automatic sync stripping from red, green, and blue channels
- Switching control through front panel, RS-232, and contact closure
- Sync on green output (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- Serration pulse removal (DIP switch-selectable)
- Choice of sync polarities (DIP switch-selectable)
- Choice of vertical sync pulse
- Internal international power supply
- Vented, rack-mountable, rugged metal enclosure
- Optional kits for under-desk mounting or through-desk mounting

MODEL	PART #
RGB 203 Rxi	60-508-01

OPTIONAL ACCESSORIES

Under-desk mount kit .....70-077-01 (page 442)
Through-desk mount kit .....70-077-02 (page 442)
1U rack shelf .....60-190-01 (page 445)
3.5 mm stereo plug 10-306-01
Interface kit case 21-009-01

SPECIFICATIONS

VIDEO

Routing ..... 3 x 1 router
Gain ..... 0.5V to 1.45V p-p
Bandwidth ..... 300 MHz (-3dB)
Rise time ..... 1.5 ns

VIDEO INPUT

Number/signal type ..... 3 analog: RGBHV, RGBS, RGsB, RsGsBs
Connectors ..... (3) 15-pin HD female
Nominal level ..... 0.7V p-p for RGB
Minimum/maximum levels ..... Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance ..... 75 ohms
Horizontal frequency ..... 15 kHz to 150 kHz
Vertical frequency ..... 40 Hz to 140 Hz
Return loss ..... <-30dB @ 5 MHz
Maximum DC offset 4V

VIDEO SIGNAL CHARACTERISTICS — RGB 203 RXI VTG ONLY

Dot clock ..... VGA 25.18 MHz, Mac 30.04 MHz, SVGA 65.04 MHz, SGI 107.4 MHz
Pixel clock accuracy ..... > 99.02%
Scan rate accuracy ..... > 99.03%
Frequency range
  VGA ..... 31.475 kHz x 60 Hz
  SVGA ..... 37.879 kHz x 60 Hz
  XGA ..... 48.392 kHz x 60 Hz
  SGI ..... 63.928 kHz x 60 Hz
Rise/fall time ..... 2.5 ns / 2.0 ns, measured

VIDEO OUTPUT

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB
Connectors ..... 6 BNC female
Nominal level ..... 0.7V p-p for RGB
Minimum/maximum levels ..... 0.3V to 1.30V p-p
Impedance ..... 75 ohms
Return loss ..... -30dB @ 5 MHz
DC offset ..... ±5mV maximum with input at 0 offset

SYNC

Input type ..... RGBHV, RGBS, RGsB, RsGsBs
Output type ..... RGBHV, RGBS, RGsB
Input level ..... 2V to 5.5V p-p with ±0.2VDC offset max.
Output level ..... TTL: 4V to 5V p-p, unterminated
Input impedance ..... 510 ohms
Output impedance ..... 75 ohms
Max. propagation delay ..... 85 ns
Max. rise/fall time ..... 2 ns
Polarity
  RGBHV ..... tracks polarity (or force negative sync via internal jumper)
  RGBS, RGsB ..... negative

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RGB 203 Rxi (continued)...

AUDIO

Routing	2 x 1 stereo router
Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (17dBu), balanced
Crosstalk	<-90dB @ 1 kHz, fully loaded
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	2 PC level stereo, unbalanced
Connectors	(2) 3.5 mm stereo jacks (female) (2 channel); tip (L), ring (R), sleeve (ground)
Impedance	>10 kohms, unbalanced, DC coupled
Nominal level	-10dBV (316mVrms)
Maximum level	+8.5dBu, (balanced or unbalanced) at 1%THD+N

AUDIO OUTPUT

Number/signal type	1 buffered stereo (2 channel) or mono, balanced/unbalanced
Connectors	(1) 3.5 mm, captive screw connector, 5-pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (Hi-Z)	>+14dBu, balanced at stated %THD+N
Maximum level (600 ohm)	>+8.5dBm, balanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

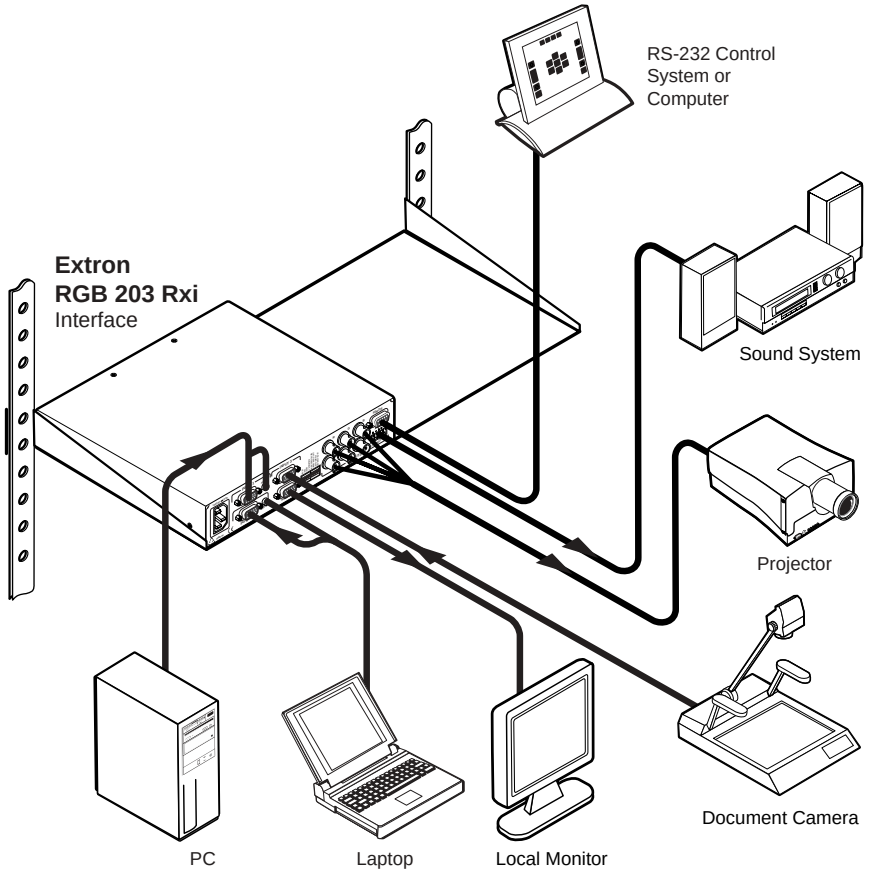
CONTROL/REMOTE — INTERFACE

Serial control port	RS-232, 9-pin female D connector (also used for contact closure)
Contact closure	(1) 9-pin female D connector (also used for RS-232)
Program control	Extron's control program for Windows® Extron's Simple Instruction Set™ – SIS™

GENERAL

Input power	100VAC to 240VAC, 50/60 Hz, 18 watts, internal, autoswitchable
Rack mount	Yes, with an optional rack shelf (part #60-190-01)
Furniture mount	Yes, with an optional under-desk mounting kit (part #70-077-01) or through-desk mounting kit (part #70-077-02)
Enclosure type	Metal, vented
Enclosure dimensions	1.75" H x 8.75" W x 8.0" D (1U high, half rack width) 4.4 cm H x 22.2 cm W x 20.3 cm D with rear BNCs: D = 8.4" (21.3 cm) (Depth excludes knobs.)
Product weight	
RGB 203 Rxi	2.2 lbs (1.0 kg)
RGB 203 Rxi VTG	2.3 lbs (1.0 kg)
Shipping weight	5 lbs (2.3 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty	3 years parts and labor

APPLICATION



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RGB 203 Rxi VTG

Universal, Three Input, Analog Interface with Audio, Enhanced ADSP™, and Built-in Video Test Generator

SIS™ Simple Instruction Set

DESCRIPTION

The Extron **RGB 203 Rxi VTG** is a universal, analog computer-video interface with audio combined with a built-in, mini video test generator (VTG). It includes three female 15-pin HD input connectors and a 15-pin HD buffered local monitor output that can be fixed to input one or shared between all three by switch selection. Audio is available on two of the three inputs on 3.5 mm stereo audio jacks. Input selection can be autoswitched, or controlled through RS-232 or contact closure. Resolution/frequency signal settings can be recalled during switching or for new computer interfacing utilizing 30 memory locations. The RGB 203 Rxi VTG is able to convert computer-generated, unbalanced audio to stereo or mono balanced line-level audio. The RGB 203 Rxi VTG is rack-mountable, which makes it a perfect solution as a rack-mount signal generator. The internal VTG features four signal rates: VGA, SVGA, XGA, and SXGA. For each signal rate, the VTG provides four test patterns: cross-hatch, gray scale, H-pattern, and color bars. It is also equipped with Extron's Advanced Digital Sync Processing (ADSP) to ensure compatibility with digital displays such as DLP, LCD, D-ILA™/LCoS, plasma, etc., with a Digital Display Sync Processing (DDSP™) DIP switch to bypass sync processing and horizontal and vertical centering. The RGB 203 Rxi VTG is ideal for classrooms, auditoriums, and conference rooms.

With a 15-150 kHz scanning range, 300 MHz (-3dB) RGB video bandwidth, the RGB 203 Rxi VTG is compatible with nearly every computer-video signal, including VGA–UXGA, Mac, Sun®, and SGI. Optional adapters for Mac to VGA and SUN/SGI to VGA connections are available. It is housed in a compact, 1U high, half rack width rugged metal enclosure and can be rack or under-desk mounted.

FEATURES

- Built-in video test generator with 16 position rotary switch for selecting VTG output resolution and pattern
- Four video test patterns (cross-hatch, H-pattern, grayscale, and color bars) for each of the four (VGA, SVGA, XGA, and SGI) resolutions
- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP™)
- Digital Sync Validation Processing (DSVP™) confirms input sources are active by scanning horizontal and vertical sync inputs and communicates over RS-232
- 30 memory locations for automatic signal setup
- Switch-selectable, buffered local monitor output locked to input one or follows output selected
- Audio processing converts unbalanced audio for balanced line-level output (stereo or mono)
- Variable level and peaking
- Horizontal and vertical centering (in one-pixel increments) with memory for each input
- LCD indicates signal frequency and resolution for easy troubleshooting
- Simultaneous output of composite sync and separate H&V sync
- Automatic sync stripping from red, green, and blue channels
- Switching control through front panel, RS-232, and contact closure
- Sync on green output (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- Serration pulse removal (DIP switch-selectable)
- Choice of sync polarities (DIP switch-selectable)
- Choice of vertical sync pulse
- Internal international power supply
- Vented, rack-mountable, rugged metal enclosure
- Optional kits for under-desk mounting or through-desk mounting

MODEL	PART #
RGB 203 Rxi VTG	60-509-01

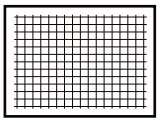
OPTIONAL ACCESSORIES

Same optional accessories as RGB 203 Rxi (page 28)

SPECIFICATIONS

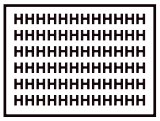
See the specifications for the RGB 203 Rxi (page 28)

TEST PATTERNS



1
Cross-hatch 24 x 32
Static, Dynamic, and
Point Convergence

2
8 Level Split Grayscale
Video Level Tracking (Color)
Video Gain Linearity (Mono)



3
H Pattern Black on White
Resolution/High Frequency Response
Bandwidth Response

4
8 Color Bar
Color Check, Verify Red,
Green, and Blue Signals

— TEST PATTERN FORMATS —

Formats	Resolution	kHz	Hz
VGA (VESA 2)	640 x 480	31.5	60
SVGA (VESA 5)	800 x 600	37.9	60
XGA (VESA 3)	1024 x 768	48.4	60
SXGA (VESA 11)	1280 x 1024	64.0	60

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CIA111 & CIA114

Architectural Computer-Video Interfaces

CIA111-3

CIA114

CIA111-1 (rear view)

DESCRIPTION

The Inline **CIA111** and **CIA114** are analog computer-video interfaces that feature a female 15-pin input with audio and a buffered local monitor output. Both are compatible with a wide variety of analog video signals, including VGA-UXGA, Mac, Sun®, SGI, and other computer-video signals. The CIA111 mounts in a standard two-gang outlet box, and the compact CIA114 installs in a one-gang outlet box.

Both units are available in a black or white finish and feature an attractive beveled faceplate with low profile connectors and controls.

In addition to its interface capability, the CIA111 also includes openings for up to four Mini Architectural Adapter Plates (MAAPs). There are over 75 MAAPs available to meet virtually any signal connection requirement. Custom engraving services are available to label each connector as required.

The CIA111 also features cable guard handles that extend from the faceplate to protect the input connectors and attached cables. For installations requiring an extremely low profile unit, the CIA111 can be ordered in the low profile version without cable guard handles.

FEATURES

- 400 MHz (-3dB) RGB video bandwidth
- Video hum suppression (differential input)
- Variable peaking
- Active PC audio to balanced audio interfacing
- Horizontal shift control
- One-button monitor emulation
- Auto power on/off
- Openings for up to four Mini Architectural Adapter Plates (MAAPs)
- Output BNC connectors on 4-inch pigtails
- Compact interfaces mount in a wall, podium, or table
- Available in black or white finish
- External international power supply included

MODEL	PART #
CIA111 (black – w/ cable guard)	CIA111-1
CIA111 (white – w/ cable guard)	CIA111-2
CIA111 (black – w/o cable guard)	CIA111-3
CIA111 (white – w/o cable guard)	CIA111-4
CIA114 (black)	CIA114-1
CIA114 (white)	CIA114-2

OPTIONAL ACCESSORIES

VGAM 6' (1.83m) MHRA cable w/ audio ....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
Mini Architectural Adapter Plates .....assorted (page 117)
PS100 12 VDC 2.0 A multi unit power supply ..60-357-01 (page 439)

SPECIFICATIONS

VIDEO

Gain	Unity
Bandwidth	400 MHz (-3dB)

VIDEO INPUT AND LOCAL MONITOR OUTPUT

Number/signal type	1 VGA–UXGA, Mac, Sun RGBHV, RGBS, RGsB* 1 buffered local monitor output identical to the input
Connectors	2 female 15-pin HD
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	30 kHz to 130 kHz
Vertical frequency	30 Hz to 120 Hz
Return loss	<-50dB @ 5 MHz

**No sync on green stripping – RGsB input signals are always output as RGsB*

VIDEO OUTPUT

Number/signal type	1 RGBHV, RGBS, RGsB
Connectors	5 BNC female on 4" (10.2 cm) pigtails
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p
Impedance	75 ohms
Return loss	<-50dB @ 5 MHz

SYNC

Input type	RGBHV, RGBS, RGsB
Output type	RGBHV, RGBS, RGsB
Input level	2.0V to 5.0V p-p
Output level	TTL: 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	1.2 µs
Max. rise/fall time	1 ns
Polarity	Positive or negative (follows input)

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.4dB
THD + Noise	0.03% @ 1 kHz at nominal level, 0.1% @ 20 kHz at maximum output
S/N	>75dB at maximum output
Stereo channel separation	>-113dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 stereo, unbalanced
Connectors	(1) 3.5 mm mini stereo jack
Impedance	>10 kohms unbalanced
Nominal level	-10dBV (316mV)
Maximum level	+8.1dBu, (balanced or unbalanced) at 1%THD+N

CONTINUED ON NEXT PAGE…

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CIA111 & CIA114 (continued)...

AUDIO OUTPUT

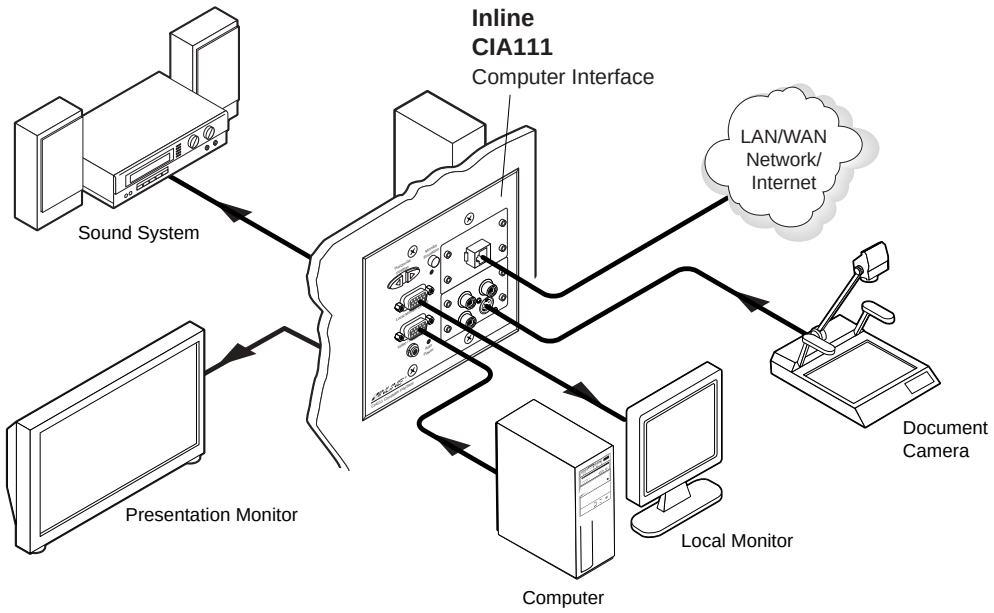
Number/signal type	1 stereo, balanced/unbalanced
Connectors	1 direct insertion captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.09dB channel to channel
Maximum level (Hi-Z)	>+15dBu, balanced or unbalanced at stated %THD+N
Maximum level (600 ohm)	>+13dBm, balanced or unbalanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to 9VDC, 600 mA power supply. Product requires 0.5 A.
Rack mount	No, but wall or furniture mountable
Enclosure type	Metal
Enclosure dimensions	
CIA111 faceplate	4.5" H x 5.0" W x 0.1" D (11.4 cm H x 12.7 cm W x 0.2 cm D) (2 gang)
CIA114 faceplate	4.5" H x 2.75" W x 0.1" D (11.4 cm H x 7.0 cm W x 0.2 cm D) (1 gang)
Device	2.8" H x 1.9" W x 1.5" D (7.1 cm H x 4.8 cm W x 3.8 cm D) (Depth excludes connectors.)
Product weight	0.7 lbs (0.3 kg)
Shipping weight	3 lbs (2 kg)
Listings/Compliances	ETL (UL1950), CE
Warranty	3 years parts and labor

APPLICATION



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CIA111AM & CIA114AM

Architectural Computer-Video Interfaces for Ackermann® Floor Tanks

CIA111AM

CIA114AM

DESCRIPTION

The Inline **CIA111AM** and **CIA114AM** are analog computer-video interfaces that feature a female 15-pin input and a buffered local monitor output. They are compatible with a variety of analog video signals including VGA–UXGA, Mac, Sun®, SGI, and other computer-video signals. Both units are specially designed to install in Ackermann floor tank models, common in Europe, that accept Ackermann GB2 (CIA111AM) or GB3 (CIA114AM) mounting boxes.

In addition to its interface capability, the CIA111AM includes openings for one Mini Architectural Adapter Plate (MAAP). There are over 75 MAAPs available to meet virtually any signal connection requirement.

FEATURES

- 400 MHz (-3dB) RGB video bandwidth
- Mounts in Ackermann floor tanks
- Video hum suppression (differential input)
- Variable peaking
- Active PC audio to balanced audio interfacing
- Horizontal shift control
- One-button monitor emulation
- Auto power on/off
- Output BNC connectors on 4-inch pigtails
- External international power supply included

MODEL	PART #
CIA111AM-1 (black)	**CIA111AM-1**
CIA114AM-1 (black)	**CIA114AM-1**

Note: Ackermann Floor Tank sold separately

SPECIFICATIONS

VIDEO

Gain	Unity
Bandwidth	400 MHz (-3dB)

VIDEO INPUT AND LOCAL MONITOR OUTPUT

Number/signal type	1 VGA–UXGA, Mac, Sun RGBHV, RGBS, RGsB* 1 buffered local monitor output identical to the input
Connectors	2 female 15-pin HD
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	30 kHz to 130 kHz
Vertical frequency	30 Hz to 120 Hz
Return loss	<-50dB @ 5 MHz

**No sync on green stripping – RGsB input signals are always output as RGsB*

VIDEO OUTPUT

Number/signal type	1 RGBHV, RGBS, RGsB (if input is RGsB)
Connectors	5 BNC female on 4" (10.2 cm) pigtails
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p
Impedance	75 ohms
Return loss	<-50dB @ 5 MHz

SYNC

Input type	RGBHV, RGBS, RGsB
Output type	RGBHV, RGBS, RGsB
Input level	2.0V to 5.0V p-p
Output level	TTL: 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	1.2 µs
Max. rise/fall time	1 ns
Polarity	Positive or negative (follows input)

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.4dB
THD + Noise	0.03% @ 1 kHz at nominal level, 0.1% @ 20 kHz at maximum output
S/N	>75dB at maximum output
Stereo channel separation	>-113dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 stereo, unbalanced
Connectors	(1) 3.5 mm mini stereo jack
Impedance	>10 kohms unbalanced
Nominal level	-10dBV (316mV)
Maximum level	+8.1dBu, (balanced or unbalanced) at 1%THD+N

AUDIO OUTPUT

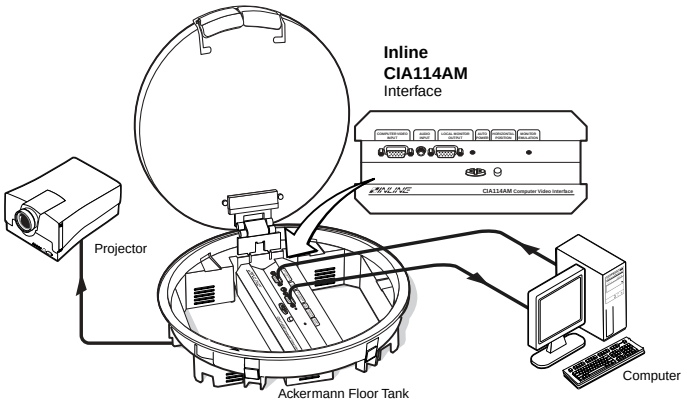
Number/signal type	1 stereo, balanced/unbalanced
Connectors	1 direct insertion captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.09dB channel to channel
Maximum level (Hi-Z)	>+15dBu, balanced or unbalanced at stated %THD+N
Maximum level (600 ohm)	>+13dBm, balanced or unbalanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to 9VDC, 600 mA power supply. Product requires 0.5 A.
Rack mount	
CIA111AM	No, but Ackermann® GB3 floor box mountable
CIA114AM	No, but Ackermann® GB2 floor box mountable
Enclosure type	Metal
Enclosure dimensions	
CIA111AM faceplate	2.75" H x 7.9" W x 1.25" D (7.0 cm H x 20.1 cm W x 3.2 cm D)
CIA114AM faceplate	2.75" H x 6.2" W x 1.25" D (7.0 cm H x 15.7 cm W x 3.2 cm D)
Device	2.8" H x 1.9" W x 1.5" D (7.1 cm H x 4.8 cm W x 3.8 cm D) (Depth excludes connectors.)
Product weight	0.7 lbs (0.3 kg)
Shipping weight	3 lbs (2 kg)
Listings/Compliances	ETL (UL1950), CE
Warranty	3 years parts and labor

APPLICATION



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CIA114F5

Architectural Computer-Video Interface for Steel City® 665 Floor Box

DESCRIPTION

The Inline **CIA114F5** is an analog computer-video interface that features a female 15-pin input and a buffered local monitor output. It is compatible with a wide variety of analog video signals, including VGA-UXGA, Mac, Sun®, SGI, and other computer-video signals. The CIA114F5 is a special version of the CIA114 interface specifically designed to mount in a Steel City® 665 floor box.

FEATURES

- 400 MHz (-3dB) RGB video bandwidth
- Compatible with Steel City 665 floor box
- Video hum suppression (differential input)
- Variable peaking
- Active PC audio to balanced audio interfacing
- Horizontal shift control
- One-button monitor emulation
- Auto power on/off
- Output BNC connectors on 4-inch pigtails
- Internal international power supply

MODEL

CIA114F5-1

PART

CIA114F5-1

Note: Steel City Floor Box sold separately

OPTIONAL ACCESSORIES

Modular A/V Panel for Steel City 665 .....CPM115 (page 113)
VGAM 6' (1.83m) MHRA cable w/ audio ....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
Mini Architectural Adapter Plates .....assorted (page 117)
PS100 12 VDC 2.0 A multi unit power supply ..60-357-01 (page 439)

SPECIFICATIONS

VIDEO

Gain	Unity
Bandwidth	400 MHz (-3dB)

VIDEO INPUT AND LOCAL MONITOR OUTPUT

Number/signal type	1 VGA–UXGA, Mac, Sun RGBHV, RGBS, RGsB* 1 buffered local monitor monitor identical to the input
Connectors	2 female 15-pin HD
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	30 kHz to 130 kHz
Vertical frequency	30 Hz to 120 Hz
Return loss	<-50dB @ 5 MHz

**No sync on green stripping – RGsB input signals are always output as RGsB*

VIDEO OUTPUT

Number/signal type	1 RGBHV, RGBS, RGsB (if input is RGsB)
Connectors	5 BNC female on 4" (10.2 cm) pigtails
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p
Impedance	75 ohms
Return loss	<-50dB @ 5 MHz

SYNC

Input type	RGBHV, RGBS, RGsB
Output type	RGBHV, RGBS, RGsB
Input level	2.0V to 5.0V p-p
Output level	TTL: 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	1.2 µs
Max. rise/fall time	1 ns
Polarity	Positive or negative (follows input)

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.4dB
THD + Noise	0.03% @ 1 kHz at nominal level, 0.1% @ 20 kHz at maximum output
S/N	>75dB at maximum output
Stereo channel separation	>-113dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 stereo, unbalanced
Connectors	(1) 3.5 mm mini stereo jack
Impedance	>10 kohms unbalanced
Nominal level	-10dBV (316mV)
Maximum level	+8.1dBu, (balanced or unbalanced) at 1%THD+N

AUDIO OUTPUT

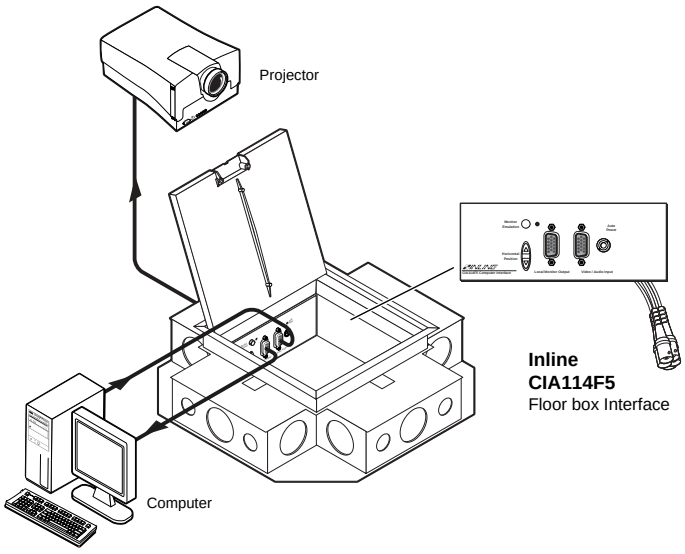
Number/signal type	1 stereo, balanced/unbalanced
Connectors	1 direct insertion captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.09dB channel to channel
Maximum level (Hi-Z)	>+15dBu, balanced or unbalanced at stated %THD+N
Maximum level (600 ohm)	>+13dBm, balanced or unbalanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to 9VDC, 600 mA power supply. Product requires 0.5 A.
Rack mount	No, but Steel City® 665 floor box mountable
Enclosure type	Metal
Enclosure dimensions	
CIA114F5 faceplate	2.1" H x 5.75" W x 1.0" D (5.3 cm H x 14.6 cm W x 2.5 cm D)
Device	2.8" H x 1.9" W x 1.5" D (7.1 cm H x 4.8 cm W x 3.8 cm D) (Depth excludes connectors.)
Product weight	0.7 lbs (0.3 kg)
Shipping weight	3 lbs (2 kg)
Listings/Compliances	ETL (UL1950), CE
Warranty	3 years parts and labor

APPLICATION



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RGB 460xi Series

Architectural Universal, Female 15-pin HD, Interfaces for Two-, Three-, and Four-Gang Wall Boxes

RGB 460xi

RGB 460xi rear view

RGB 460xi Dual

RGB 464xi

RGB 460xi MK

NEW

RGB 468 Mxi

RGB 468xi

DESCRIPTION

The Extron **RGB 460xi Series** are universal, analog computer-video interfaces that include a 15-150 kHz horizontal frequency range, 300 MHz (-3dB) of RGB video bandwidth, a female 15-pin HD connector for connecting computers to display devices, and Extron Advanced Digital Sync Processing (ADSP™). ADSP provides all-digital processing of sync signals, avoiding the tearing and other image distortions encountered when using poor sync processing methods with digital display devices (DLP, LCD, D-ILA™/LCoS, plasma, etc.).

Each interface is VGA-UXGA compatible and includes the added convenience of a buffered local monitor output. Sync output is DIP switch-selectable for composite, separate horizontal and vertical sync, and sync on green. Audio interfacing is also included, allowing the input of unbalanced, computer-generated signals to be buffered and converted to balanced, line level signals. Output connectors are on five BNC pigtails. The low profile design of the Extron RGB 460xi Series interfaces allow for easy installation in many standard-sized wall boxes and other mounting hardware. The RGB 460xi line includes:

RGB 460xi: Single interface with 15-pin HD input connector that can be mounted in a two-gang wall box.

RGB 460xi Dual: Double interface with two 15-pin HD input connectors, audio, and ADSP that fits into a four gang wall box.

RGB 464xi: In addition to the features above, the RGB 464xi includes a composite video pass–through connector (RCA to BNC), an S-video pass-through connector (4-pin mini DIN female to female), an active stereo/mono, unbalanced to balanced stereo audio driver, and an RJ-45 connector for network, data, and phone transmissions and is designed to be mounted in a three-gang wall box.

RGB 468xi: Four-gang interface with a 3.5 mm mini jack connector and four Architectural Adapter Plate (AAP) openings for signal pass-through connectors or control modules (AAPs sold separately).

RGB 460xi MK: Interface compatible with two-gang MK type wall boxes with a minimum depth of 47 mm used in the UK, Singapore, and Australia.

RGB 468 Mxi: Three-gang RGB 460xi interface with front-mount Mini Architectural Adapter Plate (MAAP) openings for signal pass-through connectors or control modules.

RGB 460xi EC: Interface compatible with European Cable Channel mounting hardware.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Horizontal shift control
- Composite or separate horizontal and vertical sync (DIP switch-selectable)
- Sync on green output (DIP switch-selectable)
- Serration pulse removal (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- 12-24 VAC or VDC for power compatibility from a wide range of sources

MODEL	PART #
RGB 460xi (gray)	60-373-01
RGB 460xi (black)	60-373-02
RGB 460xi (white)	60-373-03
RGB 460xi EC (white)	60-373-10
RGB 460xi Dual (gray)	60-373-11
RGB 460xi Dual (black)	60-373-12
RGB 460xi Dual (white)	60-373-13
RGB 460xi MK (black & white)	60-467-01
RGB 460xi MK (unfinished)	60-467-51
RGB 464xi (gray)	60-374-01
RGB 464xi (black)	60-374-02
RGB 464xi (white)	60-374-03
RGB 468xi (gray)	60-375-01
RGB 468xi (black)	60-375-02
RGB 468xi (white)	60-375-03
RGB 468 Mxi (black)	60-591-02
RGB 468 Mxi (white)	60-591-03

OPTIONAL ACCESSORIES

VGAM 6' MHRA 15-Pin HD Cable .....26-490-02 (page 401)
Mac Adapter 15-HDM Kit with Audio .....70-156-01 (page 420)
13W3 Adapter 15-HDM Kit with Audio.....70-157-03 (page 420)
P/S 100 12 VDC 2.0 A multi unit power supply..60-357-01 (page 439)
Architectural Adapter Plates (AAPs) .....assorted (page 96)
Mini Architectural Adapter Plates (MAAPs) .....assorted (page 111)

CONTINUED ON NEXT PAGE…

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RGB 460xi Series (continued)...

SPECIFICATIONS

VIDEO

Gain	Unity (0.7V), 15% with 3dB peaking (0.8V), 30% with 6dB peaking (0.9V)
Bandwidth	300 MHz (-3dB)

VIDEO INPUT AND LOOP THROUGH

Number/signal type	
RGB 460xi Dual	2 analog RGBHV, RGBS, RGsB
All other models	1 analog RGBHV, RGBS, RGsB
Connectors	
RGB 460xi/460xi EC/464xi/468xi	(1) 15-pin HD female buffered input connector and (1) 15-pin HD female local monitor loop through connector
RGB 460xi Dual	(2) 15-pin HD female buffered input connectors and (2) 15-pin HD female local monitor loop through connectors
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance	75 ohms or Hi Z, switchable (set to 75 ohms if no local monitor is connected)
Horizontal frequency	15 kHz to 150 kHz (optimum: 15 kHz to 62 kHz)
Vertical frequency	30 Hz to 170 Hz
Return loss	<-30dB @ 5 MHz

VIDEO OUTPUT

Number/signal type	
RGB 460xi Dual	2 separate analog RGBHV, RGBS, RGsB
All other models	1 analog RGBHV, RGBS, RGsB
Connectors	
RGB 460xi Dual	2 x 5 BNC female on 2" to 2.5" cables
All other models	5 BNC female on 2" to 2.5" cables
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.9V p-p (switch-selectable) w/peaking and 0.7V p-p input
Impedance	75 ohms
Return loss	-30dB @ 5 MHz

SYNC

Input type	Autodetect RGBHV, RGBS, RGsB (accepts RGsB but does not strip from video)
Output type	
RGBHV	at all times
RGBS	switch-selectable
RGsB	switch-selectable or pass-through
Input level	2.0V to 5.5V p-p with +0.2VDC offset max.
Output level	4.0V to 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	52 ns
Max. rise/fall time	2.5 ns
Polarity	Positive or negative

AUDIO — ALL MODELS

Gain	Unbalanced output: 0dB; balanced output: +6dB
Response	20 Hz to 20 kHz, ±0.5dB
THD + Noise	0.03% @1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (14dBu), balanced
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT — RGB 464XI

Number/signal type	2 stereo, unbalanced, 20 Hz to 20 kHz
Connectors	
Ch. 1	3.5 mm stereo female jack (2 channel), unbalanced; tip (L), ring (R), sleeve (ground)
Ch. 2	2 RCA female jacks
Impedance	>5 kohms unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu (unbalanced) at 1%THD+N

AUDIO INPUT — RGB 460XI, RGB 460XI EC, RGB 468XI, RGB 460XI DUAL

Number/signal type	
RGB 460xi Dual	2 separate, stereo, unbalanced, 20 Hz to 20 kHz
Other models	1 stereo, unbalanced, 20 Hz to 20 kHz
Connectors	
RGB 460xi Dual	(2) 3.5 mm stereo female jacks (2 channel), unbalanced; tip (L), ring (R), sleeve (ground)
Other models	3.5 mm stereo female jack (2 channel), unbalanced; tip (L), ring (R), sleeve (ground)
Impedance	>5 kohms unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu (unbalanced) at 1%THD+N

AUDIO OUTPUT — RGB 464XI

Number/signal type	2 buffered, stereo (2 channel), balanced/unbalanced
Connectors	3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	+14dBm, balanced at stated %THD+N

AUDIO OUTPUT — RGB 460XI, RGB 460XI EC, RGB 468XI, RGB 460XI DUAL

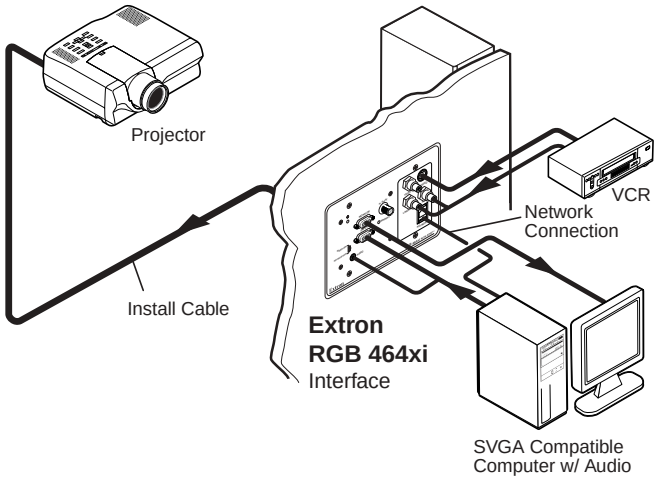
Number/signal type	
RGB 460xi Dual	2 separate, buffered, stereo (2 channel), balanced/unbalanced
Other models	1 buffered, stereo (2 channel), balanced/unbalanced
Connectors	3.5 mm captive screw connector, 5 pole
Impedance	50 ohms, unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	+14dBm, balanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to a 9 to 24VDC, 0.20 A power supply. Product requires 0.2 A (minimum). (A 12VDC, 1 A power supply is included.)
Rack mount	No
RGB 460xi MK	MK box mountable
All other models	Wall or furniture mountable
Enclosure type	Metal
Enclosure dimensions	
RGB 460xi faceplate	4.5" H x 4.6" W x 0.1" D (2 gang) (11.4 cm H x 11.7 cm W x 0.3 cm D)
RGB 460xi MK faceplate	3.4" H x 5.7" W x 0.1" D (8.6 cm H x 14.5 cm W x 0.3 cm D)
RGB 464xi faceplate	4.5" H x 6.4" W x 0.1" D (3 gang) (11.4 cm H x 16.3 cm W x 0.3 cm D)
RGB 468xi/RGB 460xi Dual faceplate	4.5" H x 8.3" W x 0.1" D (4 gang) (11.4 cm H x 21.2 cm W x 0.3 cm D)
RGB 460 EC faceplates	3.2" H x 4.4" W x 0.1" D (8.0 cm H x 11.2 cm W x 0.3 cm D)
Interface enclosure for all models (RGB 460xi Dual includes two enclosures)	2.7" H x 3.3" W x 1.0" D (6.9 cm H x 8.4 cm W x 2.8 cm D) (Depth excludes front panel connectors and controls.)
Product weight	
RGB 460xi	0.5 lbs (0.2 kg)
RGB 460xi MK	0.5 lbs (0.2 kg)
RGB 464xi, RGB 468xi	0.7 lbs (0.3 kg)
EC models	0.7 lbs (0.3 kg)
RGB 460xi Dual	1.0 lbs (0.5 kg)
Shipping weight (all models)	3 lbs (1.4 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty	3 years parts and labor

APPLICATION



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RGB 460xi Series Floor Box Interfaces

Architectural Interfaces for FSR and Steel City® Floor Boxes

RGB 460xi SC-AFM 2*

RGB 460xi SC-AFM 4*

RGB 464xi SC-AFM 6*

RGB 468xi SC-AFM 6*

* Floor Box sold separately

DESCRIPTION

The Extron **RGB 460xi Series Floor Box Interfaces** are architectural interfaces that can be mounted in Steel City AFM 2, AFM 4, AFM 6, AFM 8, or FSR floor boxes. A low profile design provides ample space for cables and connectors within the floor box. Each mounting plate is engineered to fit easily into any of the floor box configurations, making installations quick and clean.

With a 15-150 kHz horizontal frequency range, and 300 MHz (-3dB) of RGB video bandwidth, each interface features Extron's Advanced Digital Sync Processing (ADSP™) and a female 15-pin HD connector for connecting computers to display devices.

ADSP provides all-digital processing of sync signals, avoiding the tearing and other image distortions encountered when using poor sync processing methods with digital display devices such as DLP, LCD, D-ILA™/LCoS plasma, etc.

In addition, each interface is VGA–UXGA compatible, and includes the added convenience of a buffered local monitor output. Sync output is DIP switch-selectable for composite, separate horizontal and vertical sync, and sync on green. Audio interfacing is also included, allowing the input of unbalanced, computer-generated signals to be buffered and converted to balanced, line level signals. Output connectors are on five BNC pigtails.

The RGB 460xi Series Floor Box Interfaces include:

RGB 460xi FSR: RGB 460xi interface for FSR floor boxes.

RGB 460xi SC-AFM 2: RGB 460xi interface for Steel City AFM 2 floor boxes.

RGB 460xi SC-AFM 4: RGB 460xi interface for Steel City AFM 4 floor boxes.

RGB 464xi SC-AFM 6: RGB 464xi interface with a composite video pass–through connector (RCA to BNC), an S-Video pass-through connector (4-pin mini DIN female to female), an active stereo/mono, unbalanced to balanced stereo audio driver, and an RJ-45 connector for network, data, and phone transmissions and is designed to be mounted in a Steel City AFM 6 floor box.

RGB 468xi SC-AFM 6: RGB 468xi interface with three single space AAP openings for Steel City AFM 6 floor boxes.

SC-AFM 8 Mounting Kit: A mounting kit for Steel City AFM 8 floor boxes. It can accommodate any Extron four-gang, Extron three-gang, or Extron one- or two-gang faceplate. The SC-AFM 8 can support such products as Extron RGB 460xi, RGB 464xi, or RGB 468xi interfaces, as well as the Extron TP T 460 and assorted Extron AAPs.

SC-AFM 8
Mounting Kit

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Horizontal shift control
- Composite or separate horizontal and vertical sync (DIP switch-selectable)
- Sync on green output (DIP switch-selectable)
- Serration pulse removal (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- 12-24 VAC or VDC for power compatibility from a wide range of sources
- Compatible with Steel City® AFM 2, AFM 4, AFM 6, AFM 8, or FSR floor boxes

MODEL	PART #
RGB 460xi FSR	60-373-40
RGB 460xi SC-AFM 2	60-463-01
RGB 460xi SC-AFM 4	60-464-01
RGB 464xi SC-AFM 6	60-465-01
RGB 468xi SC-AFM 6	60-466-01
SC-AFM 8 Mounting Kit	70-203-01

Note: FSR and Steel City Floor Boxes sold separately

OPTIONAL ACCESSORIES

VGAM 6' MHRA 15-Pin HD Cable .....26-490-02 (page 401)
Mac Adapter 15-HDM Kit with Audio .....70-156-01 (page 420)
13W3 Adapter 15-HDM Kit with Audio.....70-157-03 (page 420)
PS 100 12 VDC 2.0 A multi unit power supply..60-357-01 (page 439)
Architectural Adapter Plates (AAPs) .....assorted (page 96)

CONTINUED ON NEXT PAGE...

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RGB 460xi Series Floor Box Interfaces (continued)...

SPECIFICATIONS

VIDEO

Gain	Unity (0.7V), 15% with 3dB peaking (0.8V), 30% with 6dB peaking (0.9V)
Bandwidth	300 MHz (-3dB)

VIDEO INPUT AND LOOP THROUGH

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	(1) 15-pin HD female buffered input connector and (1) 15-pin HD female local monitor loop through connector
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance	75 ohms or Hi Z, switchable (set to 75 ohms if no local monitor is connected)
Horizontal frequency	15 kHz to 150 kHz (optimum: 15 kHz to 62 kHz)
Vertical frequency	30 Hz to 170 Hz
Return loss	<-30dB @ 5 MHz

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	5 BNC female on 2″ to 2.5″ cables
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.9V p-p (switch-selectable) w/peaking and 0.7V p-p input
Impedance	75 ohms
Return loss	-30dB @ 5 MHz

SYNC

Input type	Autodetect RGBHV, RGBS, RGsB (accepts RGsB but does not strip from video)
Output type	
RGBHV	at all times
RGBS	switch-selectable
RGsB	switch-selectable or pass-through
Input level	2.0V to 5.5V p-p with +0.2VDC offset max.
Output level	4.0V to 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	52 ns
Max. rise/fall time	2.5 ns
Polarity	Positive or negative

AUDIO — ALL MODELS

Gain	Unbalanced output: 0dB; balanced output: +6dB
Response	20 Hz to 20 kHz, ±0.5dB
THD + Noise	0.03% @1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (14dBu), balanced
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT — RGB 464XI

Number/signal type	2 stereo, unbalanced, 20 Hz to 20 kHz
Connectors	
Ch. 1	3.5 mm stereo female jack (2 channel), unbalanced; tip (L), ring (R), sleeve (ground)
Ch. 2	2 RCA female jacks
Impedance	>5 kohms unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu (unbalanced) at 1%THD+N

AUDIO INPUT — RGB 460XI, RGB 468XI

Number/signal type	1 stereo, unbalanced, 20 Hz to 20 kHz
Connectors	3.5 mm stereo female jack (2 channel), unbalanced; tip (L), ring (R), sleeve (ground)
Impedance	>5 kohms unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu (unbalanced) at 1%THD+N

AUDIO OUTPUT — RGB 464XI

Number/signal type	2 buffered, stereo (2 channel), balanced/unbalanced
Connectors	3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	+14dBm, balanced at stated %THD+N

AUDIO OUTPUT — RGB 460XI, RGB 468XI

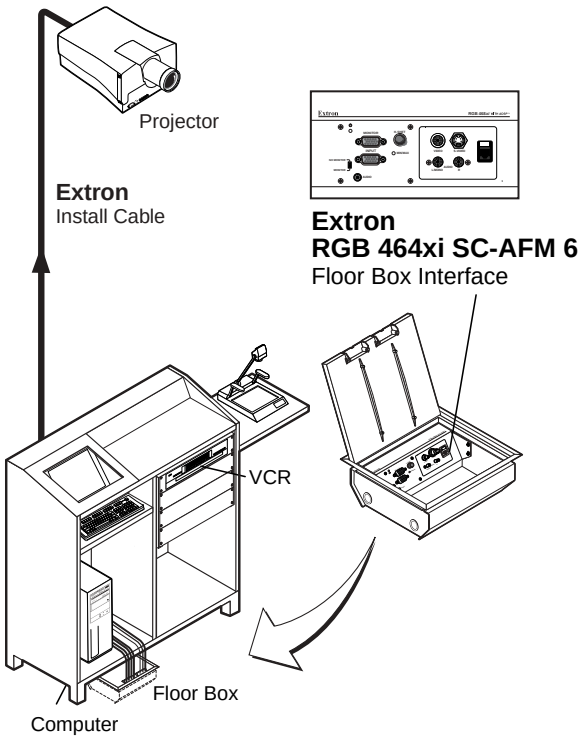
Number/signal type	1 buffered, stereo (2 channel), balanced/unbalanced
Connectors	3.5 mm captive screw connector, 5 pole
Impedance	50 ohms, unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	+14dBm, balanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to a 9 to 24VDC, 0.20 A power supply. Product requires 0.2 A (minimum). (A 12VDC, 1 A power supply is included.)
Rack mount	No, Steel City AFM floorbox mountable
Enclosure type	Metal
Enclosure dimensions	
RGB 460xi FSR faceplate	4.5" H x 3.5" W x 0.1" D (11.4 cm H x 9.0 cm W x 0.3 cm D)
RGB 460xi SC-AFM2 faceplate	2.9" H x 3.5" W x 0.1" D (7.4 cm H x 8.9 cm W x 0.3 cm D)
RGB 460xi SC-AFM4 faceplate	2.9" H x 5.8" W x 0.1" D (7.4 cm H x 14.7 cm W x 0.3 cm D)
RGB 464xi SC-AFM6, RGB 468xi SC-AFM6 faceplate	2.9" H x 8.9" W x 0.1" D (7.4 cm H x 22.6 cm W x 0.3 cm D)
Interface enclosure for all models	2.7" H x 3.3" W x 1.0" D (6.9 cm H x 8.4 cm W x 2.8 cm D) (Depth excludes front panel connectors and controls.)
Enclosure dimensions	
SC-AFM8 adapter plate	4.4" H x 9.4" W x 0.1" D (11.2 cm H x 23.9 cm W x 0.3 cm D)
Product weight	
RGB 460xi SC-AFM2	0.5 lbs (0.3 kg)
RGB 460xi SC-AFM4, RGB 464xi SC-AFM6, RGB 468xi SC-AFM6	0.8 lbs (0.4 kg)
SC-AFM8	0.6 lbs (0.3 kg)
Shipping weight (all models)	3 lbs (1.4 kg)
Listings/Compliances	UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty	3 years parts and labor

APPLICATION



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CIA112

Architectural Computer-Video Interface with Two Inputs and MAAP Openings

DESCRIPTION

The Inline **CIA112** is an analog computer-video interface that features two female 15-pin inputs with audio, two buffered local monitor outputs, and openings for up to four Mini Architectural Adapter Plates (MAAPs). There are more than 75 MAAPs available to meet virtually any signal connection requirement. It is compatible with a wide variety of analog video signals, including VGA-UXGA, Mac, Sun®, SGI, and other computer-video signals. The CIA112 mounts in a standard three-gang outlet box.

The CIA112 interface features a beveled faceplate and is available in a black or white finish to complement the decor of individual installation environments. Cable guard handles extend from the faceplate to protect the input connectors and attached cables. For table top and podium installations requiring an extremely low profile unit, the CIA112 can be ordered in the low profile version without cable guard handles.

FEATURES

- 400 MHz (-3dB) RGB video bandwidth
- Two inputs with three switching modes: manual, auto, and remote via contact closure
- Video hum suppression (differential input)
- Variable peaking
- Active PC audio to balanced audio interfacings
- Horizontal shift control
- One-button monitor emulation
- Openings for up to four Mini Architectural Adapter Plates (MAAPs)
- Output BNC connectors on 4-inch pigtails
- Mounts in a three–gang junction box
- External international power supply included

MODEL / PART

MODEL	PART #
CIA112 (black)	**CIA112-1**
CIA112 (Inline white)	**CIA112-2**
CIA112 no cable guards (black)	**CIA112-3**
CIA112 no cable guards (Inline white)	**CIA112-4**

OPTIONAL ACCESSORIES

VGAM 6' (1.83m) MHRA cable w/audio .....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
Mini Architectural Adapter Plates (MAAPs)....assorted (page 117)

SPECIFICATIONS

VIDEO

Gain	Unity
Bandwidth	400 MHz (-3dB)

VIDEO INPUT AND LOCAL MONITOR OUTPUT

Number/signal type	2 VGA–UXGA, Mac, Sun RGBHV, RGBS, RGsB* 2 buffered local monitor outputs identical to the inputs
Connectors	4 female 15-pin HD
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	30 kHz to 130 kHz
Vertical frequency	30 Hz to 120 Hz
Return loss	<-40dB @ 5 MHz

**No sync on green stripping – RGsB input signals are always output as RGsB*

VIDEO OUTPUT

Number/signal type	1 RGBHV, RGBS, RGsB (if input is RGsB)
Connectors	5 BNC female on 4" (10.2 cm) pigtails
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p
Impedance	75 ohms
Return loss	<-50dB @ 5 MHz
DC offset	±6.0mV maximum with input at 0 offset

SYNC

Input type	RGBHV, RGBS, RGsB
Output type	RGBHV, RGBS, RGsB
Input level	TTL: 5.0V p-p
Output level	TTL: 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	80 ns
Max. rise/fall time	1 ns
Polarity	Positive or negative (follows input)

AUDIO

Gain	Unbalanced output: 0dB
Frequency response	20 Hz to 20 kHz, ±0.4dB
THD + Noise	0.04% @ 1 kHz at nominal level, 0.3% @ 20 kHz at maximum output
S/N	>70dB at maximum output
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	2 stereo, unbalanced
Connectors	(2) 3.5 mm mini stereo jacks
Impedance	>10 kohms unbalanced
Nominal level	-10dBV (316mV)
Maximum level	+7.0dBu, (balanced or unbalanced) at 1%THD+N

AUDIO OUTPUT

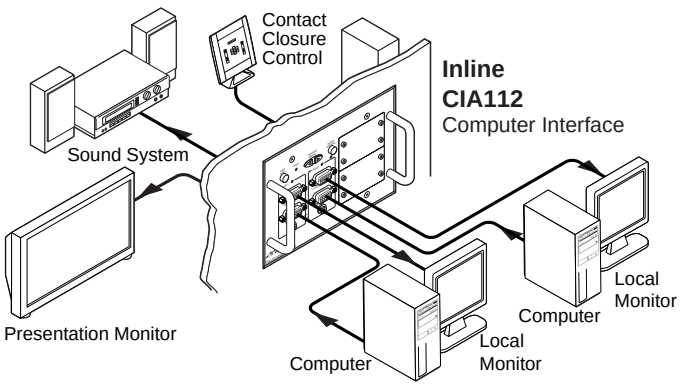
Number/signal type	1 stereo, balanced/unbalanced
Connectors	(1) direct insertion captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 50 ohms balanced
Gain error	±0.01dB channel to channel
Maximum level (Hi-Z)	>+13dBu, balanced or unbalanced at stated %THD+N
Maximum level (600 ohm)	>+13dBm, balanced or unbalanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 8 watts, external, autoswitchable; to 9VDC, 1.5 A power supply. Product requires 0.5 A.
Rack mount	No, but wall or furniture mountable
Enclosure type	Metal
Enclosure dimensions	
CIA112 faceplate	4.5" H x 6.4" W x 0.1" D (11.4 cm H x 16.3 cm W x 0.2 cm D)
Device	2.8" H x 3.1" W x 1.4" D (7.1 cm H x 7.9 cm W x 3.6 cm D) (Depth excludes connectors and cable guard handles.)
Product weight	0.7 lbs (0.3 kg)
Shipping weight	3 lbs (2 kg)
Listings/Compliances	ETL (UL1950), CE
Warranty	3 years parts and labor

APPLICATION



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RGB 470xi Series

Dual Input, Architectural Interfaces for Two-, Three-, and Four-Gang Wall Boxes

RGB 472xi

Back

RGB 474xi

RGB 478xi

RGB 478 Mxi

DESCRIPTION

The Extron **RGB 470xi Series** with Advanced Digital Sync Processing (ADSP™) are universal, analog computer-video interfaces with two female 15-pin HD inputs and a buffered local monitor output that can be fixed to input one or set to follow the input selected to the display. Input selection can be autoswitched, or controlled through the front panel or contact closure. The RGB 470xi Series provides two memories, one per input, for centering settings for image consistency during switching or in case of power loss. With a 15-130 kHz scanning range and 300 MHz (-3dB) of RGB video bandwidth, the RGB 470xi Series interfaces accept VGA-UXGA, Mac, Sun, and SGI signals while providing RGBHV, RGBS, or RGsB output on five BNC pigtails. The RGB 470xi Series converts computer-generated, unbalanced audio to balanced line level stereo or mono audio for output on a 3.5 mm captive screw connector, and features sync processing through Extron's exclusive ADSP technology, ensuring compatibility with digital displays such as DLP, LCD, D-ILA™/LCoS, plasma, etc.

RGB 472xi: Dual input interface that can be mounted in a two-gang wall box

RGB 472xi EC: Interface compatible with European Cable Channel mounting hardware

RGB 474xi: In addition to the features above, the RGB 474xi includes a composite video pass–through connector (RCA to BNC), an S-video pass-through connector (4-pin mini DIN female to female), an active stereo/mono, unbalanced to balanced stereo audio driver, and an RJ-45 connector for network, data, and phone transmissions and is designed to be mounted in a three-gang wall box.

RGB 478xi: Dual input interface with four single spaces for Architectural Adapter Plates (AAPs) for signal pass-through connectors. This model is designed to be mounted in a four-gang wall box.

RGB 478 Mxi: Three-gang RGB 470xi interface with four single spaces for Mini Architectural Adapter Plates (MAAPs).

As Extron Architectural Series Interfaces, the RGB 472xi's compact design fits snugly in a two-gang wall box, while the RGB 474xi and RGB 478xi fit into three- and four-gang wall boxes respectively. These designs combine shallow depth with wall mounting plates for easy installation.

FEATURES

- Two 15-pin HD input connectors
- One switch-selectable, buffered local monitor output locked to input one or follows output selected
- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Two memories (one per input) for centering settings
- Active PC audio to balanced audio interfacing
- Horizontal shift control
- ID bit termination on pins 4 and 11
- Composite or separate horizontal and vertical sync (DIP switch-selectable)
- Autoswitching
- Contact closure switching control
- Sync on green output (DIP switch-selectable)
- Serration pulse removal (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- External international power supply included (part# 70-055-01, page 439)

Features exclusive to RGB 474xi:

- Active PC audio to balanced audio interfacing on one 3.5mm captive screw connector and two female RCA connectors
- Pass-through composite video RCA and S-video 4-pin mini DIN connectors

Features exclusive to RGB 478xi:

- Four single spaces for Architectural Adapter Plates (AAPs) for signal pass-through connectors

MODEL	PART #
RGB 472xi (gray)	60-515-01
RGB 472xi (black)	60-515-02
RGB 472xi (white)	60-515-03
RGB 472xi EC (white)	60-515-10
RGB 474xi (gray)	60-519-01
RGB 474xi (black)	60-519-02
RGB 474xi (white)	60-519-03
RGB 478xi (gray)	60-521-01
RGB 478xi (black)	60-521-02
RGB 478xi (white)	60-521-03
RGB 478 Mxi (black)	60-592-02
RGB 478 Mxi (white)	60-592-03

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RGB 470xi Series (continued)...

OPTIONAL ACCESSORIES

VGAM 6' MHRA 15-Pin HD Cable .....26-490-02 (page 401)
Mac Adapter 15-HDM Kit with Audio .....70-156-01 (page 420)
13W3 Adapter 15-HDM Kit with Audio .....70-157-03 (page 420)
P/S 100 12 VDC 2.0 A multi unit power supply..60-357-01 (page 439)
Architectural Adapter Plates (AAPs) .....assorted (page 96)
Mini Architectural Adapter Plates (MAAPs) .....assorted (page 111)

SPECIFICATIONS

VIDEO

Routing	2 x 1 router
Gain	Unity (0.7V), 15% with 3dB peaking (0.8V), 30% with 6dB peaking (0.9V)
Bandwidth	300 MHz (-3dB)

VIDEO INPUT AND LOOP THROUGH

Number/signal type	2 analog RGBHV, RGBS, RGsB
Connectors	(2) 15-pin HD female buffered input and (1) 15-pin HD female local monitor loop through
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance	75 ohms, buffered
Horizontal frequency	15 kHz to 150 kHz (optimum 15 kHz to 62 kHz)
Vertical frequency	30 Hz to 170 Hz
Return loss	<-30dB @ 5 MHz

VIDEO OUTPUT

Number/signal type	2 identical analog RGBHV, RGBS, RGsB
Connectors	5 BNC female on 2" to 2.5" cables (1) 15-pin HD female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.9V p-p (switch-selectable) w/peaking and 0.7V p-p input
Impedance	75 ohms
Return loss	-30dB @ 5 MHz

SYNC

Input type	RGBHV, RGBS, RGsB (accepts RGsB, but does not strip sync from video)
Output type	
RGBHV	at all times
RGBS	switch-selectable
RGsB	switch-selectable
Input level	2.0V to 5.5V p-p with +0.2VDC offset max.
Output level	4.0V to 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	52 ns
Max. rise/fall time	2.5 ns
Polarity	Positive or negative (follows input), or negative (DIP switch-selectable)

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Response	20 Hz to 20 kHz, ±0.5dB
THD + Noise	0.03% @1 kHz, 0.3% @ 20 kHz at rated nominal level
S/N	<-90dB at rated maximum output (14dBu), balanced
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	2 PC level stereo, unbalanced
Connectors	(2) 3.5 mm stereo female jacks (2 channel), unbalanced; tip (L), ring (R), sleeve (ground)
Impedance	>5 kohms unbalanced, DC coupled
Nominal level	-10dBV (316mVrms)
Maximum level	+8.5dBu at 1% THD+N

AUDIO OUTPUT

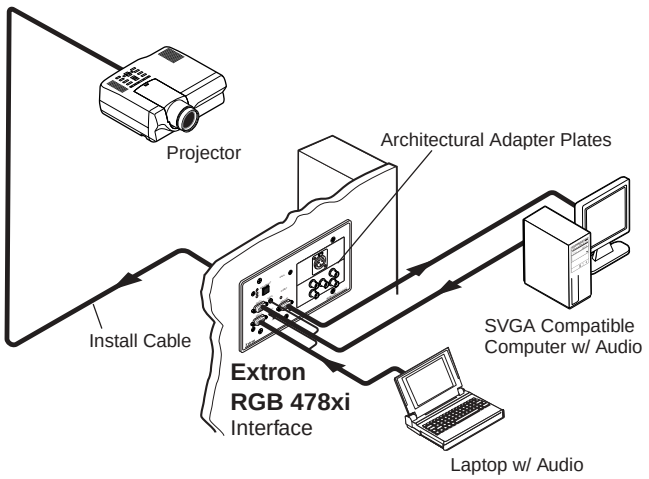
Number/signal type	1 buffered, stereo or mono, balanced
Connectors	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms, unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	+14dBm, balanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to a 9 to 24VDC, 0.20 A power supply. Product requires 0.2 A (minimum). (A 12VDC, 1 A power supply is included.)
Rack mount	No
All other models	Wall or furniture mountable
Enclosure type	Metal
Enclosure dimensions	
RGB 472xi faceplate	4.5" H x 4.6" W x 0.1" D (2 gang) (11.4 cm H x 11.7 cm W x 0.3 cm D)
RGB 474xi faceplate	4.5" H x 6.4" W x 0.1" D (3 gang) (11.4 cm H x 16.3 cm W x 0.3 cm D)
RGB 478xi faceplate	4.5" H x 8.3" W x 0.1" D (4 gang) (11.4 cm H x 21.2 cm W x 0.3 cm D)
RGB 472xi EC faceplate	3.2" H x 4.4" W x 0.1" D (8.0 cm H x 11.2 cm W x 0.3 cm D)
Interface enclosure for all models	2.7" H x 3.3" W x 1.2" D (6.9 cm H x 8.4 cm W x 2.5 cm D) (Depth excludes front panel connectors and controls.)
Product weight	
RGB 472xi	0.5 lbs (0.2 kg)
RGB 474xi	0.6 lbs (0.3 kg)
RGB 478xi	0.7 lbs (0.3 kg)
EC models	0.7 lbs (0.3 kg)
Shipping weight (all models)	3 lbs (1.4 kg)
Listings, Compliances	UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty	3 years parts and labor

APPLICATION



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RGB 470xi Series Floor Box Interfaces

Dual Input Architectural Interfaces for FSR and Steel City® AFM Floor Boxes

RGB 472xi SC AFM 2*

RGB 472xi SC AFM 4*

RGB 474xi SC AFM 6*

RGB 478xi SC AFM 6*

* Floor Box sold separately

DESCRIPTION

The Extron **RGB 470xi Series Floor Box Interfaces** are architectural interfaces that can be mounted in Steel City AFM 2, AFM 4, AFM 6, AFM 8, or FSR floor boxes. A low profile design provides ample space for cables and connectors within the floor box. Each mounting plate is engineered to fit easily into the floor box, making installations quick and clean.

With a 15-130 kHz horizontal frequency range and 300 MHz (-3dB) of RGB video bandwidth, each interface features Extron's Advanced Digital Sync Processing (ADSP™) and two female 15-pin HD connectors and a buffered local monitor output that can be fixed to input one or set to follow the input selected to the display. Input selection can be made via the front panel, autoswitching, or contact closure.

ADSP provides all-digital processing of sync signals, avoiding the tearing and other image distortions encountered when using poor sync processing methods with digital display devices such as DLP, LCD, D-ILA™/LCoS, plasma, etc.

In addition, each interface will accept VGA-UXGA, Mac, Sun, and SGI signals while providing RGBHV, RGBS, or RGsB output on five BNC pigtails. The RGB 470xi Series will convert computer-generated, unbalanced audio to balanced line-level stereo or mono audio for output on a 3.5 mm captive screw connector.

The RGB 470xi Series Floor Box Interfaces include:

NEW

RGB 472xi FSR: RGB 472xi interface for FSR floor boxes.

RGB 472xi SC-AFM 2: RGB 472xi interface for Steel City AFM 2 floor boxes.

RGB 472xi SC-AFM 4: RGB 472xi interface for Steel City AFM 4 floor boxes.

RGB 474xi SC-AFM 6: RGB 474xi interface with a composite video pass–through connector (RCA to BNC), an S-Video pass-through connector (4-pin mini DIN female to female), an active stereo/mono, unbalanced to balanced stereo audio driver, and an RJ-45 connector for network, data, and phone transmissions and is designed to be mounted in a Steel City AFM 6 floor box.

RGB 478xi SC-AFM 6: RGB 478xi interface with three single space AAP openings for Steel City AFM 6 floor boxes.

SC-AFM 8 Mounting Kit: A mounting kit for Steel City AFM 8 floor boxes. It can accommodate any Extron four-gang, Extron three-gang, or Extron one- or two-gang faceplate. The SC-AFM 8 can support such products as Extron RGB 460xi, RGB 464xi, or RGB 468xi interfaces, as well as the Extron TP T 460 and assorted Extron AAPs.

FEATURES

- Two 15-pin HD input connectors
- One switch-selectable, buffered local monitor output locked to input one or follows output selected
- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Two memories (one per input) for centering settings
- Active PC audio to balanced audio interfacing
- Horizontal shift control
- Autoswitching
- Contact closure switching control
- ID bit termination on pins 4 and 11
- Composite or separate horizontal and vertical sync (DIP switch-selectable)
- Sync on green output (DIP switch-selectable)
- Serration pulse removal (DIP switch-selectable)
- Digital Display Sync Processing (DDSP™), DIP switch-selectable
- External international power supply included (part# 70-055-01, page 439)
- Compatible with Steel City AFM 2, AFM 4, AFM 6, AFM 8, or FSR floor boxes

MODEL	PART #
RGB 472xi FSR	60-515-40
RGB 472xi SC-AFM 2	60-516-01
RGB 472xi SC-AFM 4	60-517-01
RGB 474xi SC-AFM 6	60-520-01
RGB 478xi SC-AFM 6	60-522-01
SC AFM 8 Mounting Kit (gray)	70-203-01

Note: FSR and Steel City Floor Boxes sold separately

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RGB 470xi Series Floor Box Interfaces (continued)...

SPECIFICATIONS

VIDEO

Routing	2 x 1 router
Gain	Unity (0.7V), 15% with 3dB peaking (0.8V), 30% with 6dB peaking (0.9V)
Bandwidth	300 MHz (-3dB)

VIDEO INPUT AND LOOP THROUGH

Number/signal type	2 analog RGBHV, RGBS, RGsB
Connectors	(2) 15-pin HD female buffered input and (1) 15-pin HD female local monitor loop through
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance	75 ohms, buffered
Horizontal frequency	15 kHz to 150 kHz (optimum 15 kHz to 62 kHz)
Vertical frequency	30 Hz to 170 Hz
Return loss	<-30dB @ 5 MHz

VIDEO OUTPUT

Number/signal type	2 identical analog RGBHV, RGBS, RGsB
Connectors	5 BNC female on 2" to 2.5" cables (1) 15-pin HD female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.7V to 0.9V p-p (switch-selectable) w/peaking and 0.7V p-p input
Impedance	75 ohms
Return loss	-30dB @ 5 MHz

SYNC

Input type	RGBHV, RGBS, RGsB (accepts RGsB, but does not strip sync from video)
Output type	
RGBHV	at all times
RGBS	switch-selectable
RGsB	switch-selectable
Input level	2.0V to 5.5V p-p with +0.2VDC offset max.
Output level	4.0V to 5.0V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	52 ns
Max. rise/fall time	2.5 ns
Polarity	Positive or negative (follows input), or negative (DIP switch-selectable)

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Response	20 Hz to 20 kHz, ±0.5dB
THD + Noise	0.03% @1 kHz, 0.3% @ 20 kHz at rated nominal level
S/N	<-90dB at rated maximum output (14dBu), balanced
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	2 PC level stereo, unbalanced
Connectors	(2) 3.5 mm stereo female jacks (2 channel), unbalanced; tip (L), ring (R), sleeve (ground)
Impedance	>5 kohms unbalanced, DC coupled
Nominal level	-10dBV (316mVrms)
Maximum level	+8.5dBu at 1% THD+N

AUDIO OUTPUT

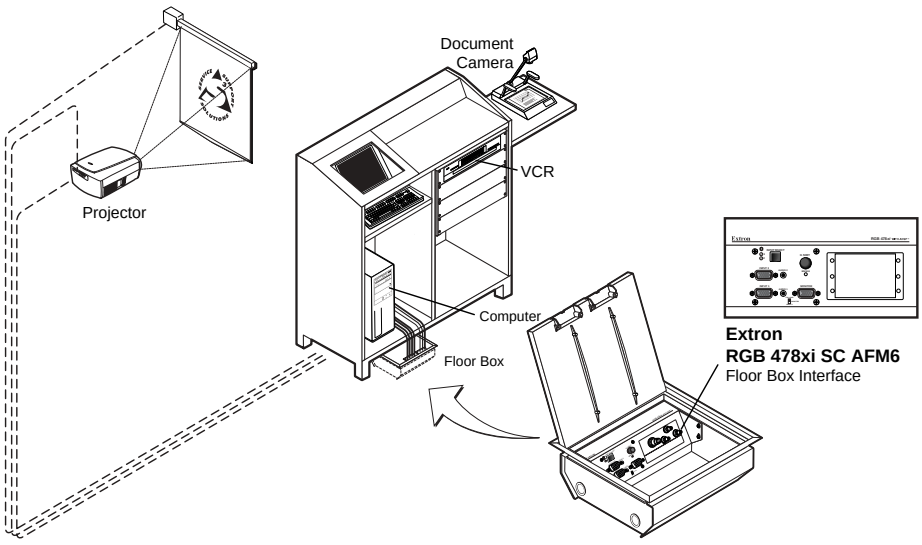
Number/signal type	1 buffered, stereo or mono, balanced
Connectors	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms, unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	+14dBm, balanced at stated %THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to a 9 to 24VDC, 0.20 A power supply. Product requires 0.2 A (minimum). (A 12VDC, 1 A power supply is included.)
Rack mount	No. Steel City AFM floorbox mountable
All other models	Wall or furniture mountable
Enclosure type	Metal
Enclosure dimensions	
RGB 472xi FSR faceplate	4.5" H x 3.5" W x 0.1" D (11.4 cm H x 9.0 cm W x 0.3 cm D)
RGB 472xi SC-AFM2 faceplate	2.9" H x 3.5" W x 0.1" D (7.4 cm H x 8.9 cm W x 0.3 cm D)
RGB 472xi SC-AFM4 faceplate	2.9" H x 5.8" W x 0.1" D (7.4 cm H x 14.7 cm W x 0.3 cm D)
RGB 474xi SC-AFM6, RGB 478xi SC-AFM6 faceplate	2.9" H x 8.9" W x 0.1" D (7.4 cm H x 22.6 cm W x 0.3 cm D)
Interface enclosure for all models	2.7" H x 3.3" W x 1.2" D (6.9 cm H x 8.4 cm W x 2.5 cm D) (Depth excludes front panel connectors and controls.)
Product weight	
RGB 472xi SC-AFM2	0.5 lbs (0.3 kg)
RGB 472xi SC-AFM4, RGB 474xi SC-AFM6, RGB 478xi SC-AFM6	0.8 lbs (0.4 kg)
Shipping weight (all models)	3 lbs (1.4 kg)
Listings, Compliances	UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty	3 years parts and labor

APPLICATION



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RGB 560 AKM

Architectural Interface with Audio Interfacing and ADSP™ for Ackermann Floor Tanks

DESCRIPTION

The Extron **RGB 560 AKM** with audio interfacing and ADSP is designed for Ackermann series floor tanks common in Europe. The RGB 560 AKM universal, computer-video interface fits flush within an Ackermann GES9B box for convenient and easy installation in the Ackermann floor tank system. RGB and audio output connections are provided on 6 inch cable extensions. The RGB 560 AKM features a 15-130 kHz horizontal scanning range with 300 MHz (-3dB) RGB video bandwidth, a female 15-pin HD input connector, Extron's exclusive Advanced Digital Sync Processing (ADSP), and active audio interfacing. This interface is compatible with VGA-UXGA, Mac, Sun, and SGI.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Active PC audio to balanced audio interfacing
- Angled low profile input connectors
- Female 15-pin HD connector
- Buffered local monitor output
- Horizontal shift control
- ID bit termination, switch-selectable
- Choice of composite or separate H&V sync, switch-selectable
- Sync on green, switch-selectable
- Choice of positive or negative sync polarities, switch-selectable
- Level and peaking
- 12-24VAC/VDC accepted through captive screw connector

MODEL / PART

MODEL	PART #
RGB 560 AKM*	**60-384-01**

Note: Ackermann Floor Tank sold separately

***External international power supply sold separately**	**70-055-01**

OPTIONAL ACCESSORIES

VGAM 6' MHRA .....26-490-02 (page 401)
VGAM 12' MHRA .....26-490-03 (page 401)
Mac Adapter 15-HDM Kit with Audio .....70-156-01 (page 420)
13W3 Adapter 15-HDM Kit with Audio.....70-157-03 (page 420)
PS 100 12 VDC 2.0 A multi unit power supply ..60-357-01 (page 439)

SPECIFICATIONS

VIDEO

Gain	Unity (0.70V p-p), (0.725V p-p) 50% peaking, (0.75V p-p) 100% peaking
Bandwidth	300 MHz (-3dB)

VIDEO INPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors	1 female 15-pin HD
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p with no offset
Impedance	75 ohms or High Z, switchable (set to 75 ohms if no local monitor is connected)
Horizontal frequency	Autoscan 15 kHz to 130 kHz
Vertical frequency	Autoscan 30 Hz to 120 Hz
Return loss	<-30dB @ 5 MHz
Maximum DC offset	4.0V

VIDEO OUTPUT

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	5 BNC female 1 female 15-pin HD for buffered local monitor output
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	0.70V to 0.75V p-p with no offset and 0.7V p-p input
Impedance	75 ohms
Return loss	<-30dB @ 5 MHz

SYNC

Input type	RGBHV TTL (±), RGBS TTL (-), RGsB 0.3V (-), RsGsBs 1.3V (-)
Output type	RGBHV (±), RGBS(-), RGsB (-)
Input level	2V to 5.5V p-p with ±0.3VDC offset (max.)
Output level	4V to 5V p-p, unterminated
Input impedance	10 kohms
Output impedance	75 ohms
Max. input voltage	5.7V p-p
Max. propagation delay	48 nS
Max. rise/fall time	3.5 nS
Polarity	
RGBHV	Polarity follows input when RGBHV is input and the sync polarity switch is set to Off. Sync polarity is negative if the sync polarity switch is set to On.

AUDIO

Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @1 kHz, 0.3% @ 20 kHz at rated maximum output
S/N	>90dB at rated maximum output (14dBm), balanced
Stereo channel separation	>95dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type	1 PC level stereo, unbalanced
Connectors	(1) 3.5 mm stereo jack, 2 channel; tip (L), ring (R), sleeve (ground)
Impedance	10 kohms, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+8.5dBu, (unbalanced) at 1%THD+N

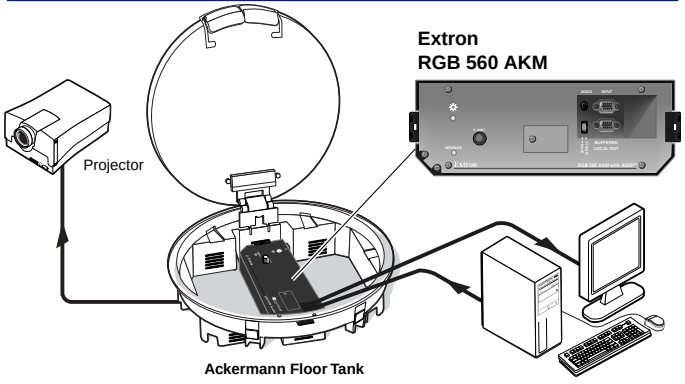
AUDIO OUTPUT

Number/signal type	1 stereo (2 channel), balanced/unbalanced
Connectors	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel
Maximum level (600 ohm)	>+14dBm, balanced at stated %THD+N

GENERAL

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, autoswitchable; to 12 to 24VAC or VDC, 0.20 A power supply. Product requires 0.20 A (minimum). (Order the power supply separately, part #70-055-01.)
Rack mount	No, but floor mountable
Enclosure type	Metal
Enclosure dimensions	
Interface	3.0" H x 8.2" W x 1.5" D (7.62 cm H x 20.8 cm W x 3.8 cm D) (Depth excludes connectors and knobs.)
Product weight	0.9 lbs (0.4 kg)
Shipping weight	3 lbs (1.4 kg)
Listings/Compliances	UL, CE
Warranty	3 years parts and labor

APPLICATION



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RGB 580xi

Architectural Remote Interface with Audio Interfacing and ADSP™ for Out-of-Sight Installations

SIS™ Simple Instruction Set

DESCRIPTION

The Extron **RGB 580xi** is a universal, computer-video interface designed to give users discreet, remote access to interface connections and controls. The RGB 580xi provides high-performance computer-video interfacing features for use in applications where the interface needs to be located out of sight. There are two components to the RGB 580xi: a double space Architectural Adapter Plate (AAP) and an interface enclosure designed to mount under a surface. Users connect computer video and audio to the interface through a female 15-pin HD connector on the small, inconspicuous AAP. The computer-video signal is then transmitted to the RGB 580xi interface enclosure over connecting cables and output to a display device on five female BNCs.

The RGB 580xi is compatible with VGA-UXGA, Mac, Sun, SGI, and other computer-video signals. It has a horizontal frequency range of 15-150 kHz and 300 MHz (-3dB) RGB video bandwidth. It outputs RGBHV, RGBS, and RGsB on five female BNCs. The RGB 580xi features Extron's exclusive Advanced Digital Sync Processing (ADSP), which provides all-digital sync processing so stable images are produced on digital display devices such as DLP, LCD, D-ILA™/LCoS, plasma, etc. Audio interfacing converts computer-generated, unbalanced audio to line-level balanced audio.

There are five different configurations of remote panels available for the RGB 580xi AAPs, giving system designers the flexibility to select which controls are needed for specific installations. These are:

RGB 580xi AAP: female 15-pin HD input, 3.5 mm stereo audio jack, and a two-color LED to indicate power and signal present.

RGB 580xi S AAP: female 15-pin HD connector, 3.5 mm stereo audio jack, two-color LED (power and signal present), and horizontal shift control.

RGB 580xi SI AAP: female 15-pin HD connector, 3.5 mm stereo audio jack, two-color LED (power and signal present), input select contact closure button, and horizontal shift control.

RGB 580xi CCS AAP: Control panel and signal input pull-out cables for mounting in an Extron Cable Cubby enclosure. Male 15-pin HD input cable, 3.5 mm stereo audio jack, 9 foot or 12 foot cable assembly, two-space AAP panel with two-color LED (power and signal present), and horizontal shift control.

RGB 580xi CCSI AAP: Control panel and signal input pull-out cables for mounting in an Extron Cable Cubby enclosure. Male 15-pin HD input cable, 3.5 mm stereo audio jack, 9 foot or 12 foot cable assembly, two-space AAP panel with two-color LED (power and signal present), horizontal shift control, and input select contact closure button.

The controls and connections from the AAP inputs are extended to the interface enclosure through cable assemblies. Each AAP version can be purchased with cable assemblies that are three or six feet in length, except for the RGB 580xi CC AAP, which comes with a 9 foot or 12 foot cable assembly. Each AAP is also available in gray, black, or white.

FEATURES

- 300 MHz (-3dB) RGB video bandwidth
- Advanced Digital Sync Processing (ADSP)
- Active PC audio to balanced audio interfacing
- Horizontal shift control
- Variable level and peaking control
- Adjustable vertical sync pulse width
- Selectable sync polarity
- Composite or separate horizontal and vertical sync (DIP switch-selectable)
- Sync on green output (DIP switch-selectable)
- RS-232 control
- Internal international power supply

MODEL	PART #
RGB 580xi (interface only)	**60-362-01**

RGB 580xi requires one of the following AAP cable assemblies:

RGB 580xi AAP 3'/0.91 m (gray)	**70-128-01**
RGB 580xi AAP 3'/0.91 m (black)	**70-128-02**
RGB 580xi AAP 3'/0.91 m (white)	**70-128-03**
RGB 580xi AAP 6'/1.83 m (gray)	**70-129-01**
RGB 580xi AAP 6'/1.83 m (black)	**70-129-02**
RGB 580xi AAP 6'/1.83 m (white)	**70-129-03**
RGB 580xi S AAP 3'/0.91 m (gray)	**70-134-01**
RGB 580xi S AAP 3'/0.91 m (black)	**70-134-02**
RGB 580xi S AAP 3'/0.91 m (white)	**70-134-03**
RGB 580xi S AAP 6'/1.83 m (gray)	**70-135-01**
RGB 580xi S AAP 6'/1.83 m (black)	**70-135-02**
RGB 580xi S AAP 6'/1.83 m (white)	**70-135-03**
RGB 580xi SI AAP 3'/0.91 m (gray)	**70-137-01**
RGB 580xi SI AAP 3'/0.91 m (black)	**70-137-02**
RGB 580xi SI AAP 3'/0.91 m (white)	**70-137-03**
RGB 580xi SI AAP 6'/1.83 m (gray)	**70-138-01**
RGB 580xi SI AAP 6'/1.83 m (black)	**70-138-02**
RGB 580xi SI AAP 6'/1.83 m (white)	**70-138-03**
RGB 580xi CCS AAP 9'/2.74 m (black)	**70-254-02**
RGB 580xi CCS AAP 12'/3.66 m (black)	**70-255-02**
RGB 580xi CCSI AAP 9'/2.74 m (black)	**70-256-02**
RGB 580xi CCSI AAP 12'/3.66 m (black)	**70-257-02**

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RGB 580xi (continued)...

OPTIONAL ACCESSORIES

3'(0.91 m) RGB 580xi AAP extension cable 26-521-01
6'(1.83 m) RGB 580xi AAP extension cable 26-521-02
12'(3.66 m) RGB 580xi AAP extension cable 26-521-03
25'(7.62 m) RGB 580xi AAP extension cable 26-521-04
35'(10.67 m) RGB 580xi AAP extension cable 26-521-05
50'(15.24 m) RGB 580xi AAP extension cable 26-521-06
VGAM 3'(0.91 m) MHRA 15-pin HD cable.....26-490-01 (page 401)
VGAM 6'(1.83 m) MHRA 15-pin HD cable.....26-490-02 (page 401)
VGAM 12'(3.66 m) MHRA 15-pin HD cable.....26-490-03 (page 401)
VGAM 25'(7.62 m) MHRA 15-pin HD cable.....26-490-04 (page 401)
VGAM 50'(15.24 m) MHRA 15-pin HD cable ....26-490-05 (page 401)

SPECIFICATIONS

VIDEO — RGB 580XI

Gain ..... 0.35V to 1.45V p-p
Bandwidth ..... 300 MHz (-3dB)

VIDEO INPUT — RGB 580XI

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors ..... (1) 15-pin HD female
Nominal level..... 0.7V p-p for RGB
Minimum/maximum levels ..... Analog: 0.3V to 1.45V p-p with no offset
Impedance ..... 75 ohms or high Z, switchable (set to 75 ohms if no local monitor is connected)
Horizontal frequency ..... Autoscan 15 kHz to 150 kHz
Vertical frequency ..... Autoscan 40 Hz to 140 Hz
Return loss ..... <-30dB @ 5 MHz
Maximum DC offset 2.0V

VIDEO INPUT — RGB 580XI AAP, RGB 580XI I AAP, RGB 580XI S AAP, RGB 580XI SI AAP

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors ..... (1) 15-pin HD female

VIDEO OUTPUT — RGB 580XI

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB
Connectors ..... 5 BNC female
Nominal level..... 0.7V p-p for RGB
Minimum/maximum levels ..... 0.35V to 1.45V p-p
Impedance ..... 75 ohms
Return loss ..... -30dB @ 5 MHz
DC offset ..... ±5mV maximum with input at 0 offset

VIDEO OUTPUT — RGB 580XI AAP, RGB 580XI I AAP, RGB 580XI S AAP, RGB 580XI SI AAP

Number/signal type ..... 1 analog RGBHV, RGBS, RGsB
Connectors ..... (1) 15-pin HD female

SYNC

Input type ..... RGBHV, RGBS, RGsB, RsGsBs
Output type ..... RGBHV, RGBS, RGsB
Input level ..... 2V to 5.5V p-p with ±0.2VDC offset max.
Output level..... TTL — 4V to 5V p-p, unterminated
Input impedance ..... 510 kohms
Output impedance ..... 75 ohms
Max. propagation delay ..... 85 ns
Max. rise/fall time ..... 2 ns
Polarity
RGBHV ..... Polarity follows input when RGBHV is input and the sync polarity switch is set to Off. Sync polarity is negative if the sync polarity switch is set to On.
RGBS, RGsB ..... Negative

AUDIO

Gain ..... Unbalanced output: 0dB; balanced output: +6dB
Frequency response ..... 20 Hz to 20 kHz, ±0.05dB
THD + Noise ..... 0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N ..... >90dB at rated maximum output, balanced
Stereo channel separation ..... >90dB @ 1 kHz to 20 kHz

AUDIO INPUT

Number/signal type ..... 1 PC level stereo, unbalanced
Connectors ..... (1) 3.5 mm stereo jack (female); tip (L), ring (R), sleeve (ground)
Impedance ..... >10 kohms, unbalanced, DC coupled
Nominal level..... -10dBV (316mV)
Maximum level ..... +8.5dBu, (balanced or unbalanced) at 1%THD+N

AUDIO OUTPUT

Number/signal type ..... 1 buffered stereo (2 channel), balanced/unbalanced
Connectors ..... 1 3.5 mm, captive screw connector, 5-pole
Impedance ..... 50 ohms unbalanced, 100 ohms balanced
Gain error ..... ±0.1dB channel to channel
Maximum level (600 ohm) ..... > +14dBm, balanced or unbalanced at stated %THD+N

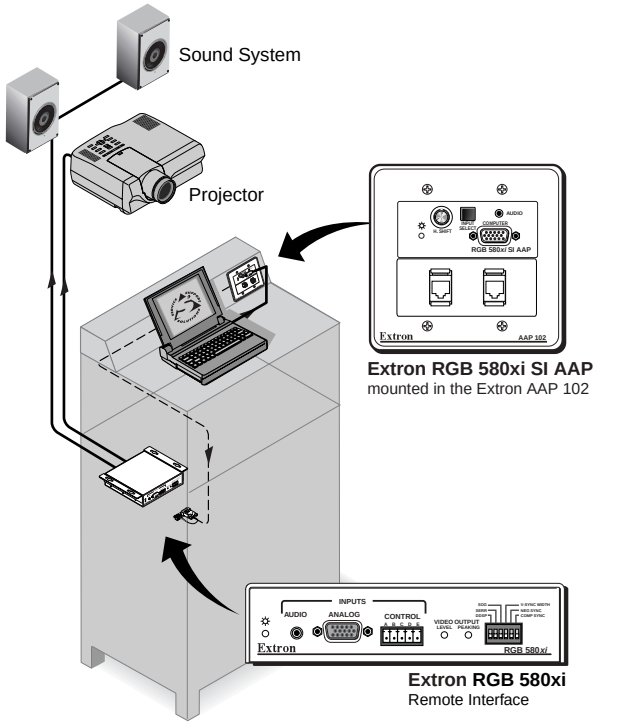
CONTROL/REMOTE — INTERFACE

Serial control port ..... RS-232, captive screw connector, 3-pole
Program control..... Extron's control program for Windows®
Extron's Simple Instruction Set™ (SIS™)

GENERAL

Power
RGB 580xi ..... 100VAC to 240VAC, 50/60 Hz, 18 watts, internal, autoswitchable
Rack mount..... No, but furniture mountable with optional under-desk mounting kit #70-077-01.
Enclosure type ..... Metal (vented)
Enclosure dimensions
RGB 580xi ..... 1.75" H x 6.4" W x 6.0" D
4.4 cm H x 16.3 cm W x 15.2 cm D
(Depth excludes connectors.)
RGB 580xi AAP models
Faceplate ..... 1.4" H x 3.5" W x 0.1" D
(3.6 cm H x 8.9 cm W x 0.3 cm D)
(double-space high AAP plates)
Circuit board..... 1.3" H x 2.5" W x 0.9" D
(3.3 cm H x 6.4 cm W x 2.3 cm D)
(Depth excludes connectors, knobs, and faceplate.)
Product weight
RGB 580xi I AAP 3', RGB 580xi SI AAP 3'.. 0.4 lbs (0.2 kg)
RGB 580xi AAP 3', RGB 580xi S AAP 3'.... 0.5 lbs (0.2 kg)
RGB 580xi AAP 6', RGB 580xi I AAP 6'.... 0.6 lbs (0.3 kg)
RGB 580xi S AAP 6', RGB 580xi SI AAP 6'.. 0.7 lbs (0.3 kg)
RGB 580xi CCS AAP 9', RGB 580xi CCSI AAP 9'
RGB 580xi CCS AAP 12',
RGB 580xi CCSI AAP 12'..... 1.0 lbs (0.5 kg)
RGB 580xi ..... 1.2 lbs (0.5 kg)
Shipping weight
AAP models ..... 2 lb (0.9 kg)
RGB 580xi ..... 4 lbs (1.8 kg)
Listings/Compliances ..... UL, CUL, CE, FCC Class A, VCCI, AS/NZS, ICES
Warranty ..... 3 years parts and labor

APPLICATION



Extron RGB 580xi SI AAP
mounted in the Extron AAP 102

Extron RGB 580xi
Remote Interface

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IN2118

Motorized, Vertical Lifting Architectural Interface with MAAP Openings

DESCRIPTION

The Inline **IN2118** is a high performance video interface for analog video signals including VGA-XGA, Mac, and SUN™ workstations. The IN2118 flush mounts neatly in a conference room or boardroom table or other presentation furniture. The IN2118 is a two sided unit that provides easy access to a high resolution computer video interface, a modular A/V connector faceplate and one or two AC convenience outlets on each side of the table. Multiple versions of the IN2118 are available with different faceplate combinations to match the A/V connector and AC power outlet requirements of each installation.

When the interface is in the lowered position, it is completely flush with the table surface. If desired, the installer can affix a piece of wood or laminate matching the table surface to the top panel of the IN2118, rendering the interface virtually invisible when lowered. The IN2118 is a motorized unit that can be raised or lowered by pressing on the top surface. The unit can also be remotely raised and lowered using contact closure control. Safety features are provided to stop the interface from descending if it senses an obstruction such as attached cables.

Each side of the IN2118 can accept four or six single size Mini Architectural Adapter Plates (MAAPs), available with a variety of popular connectors. The IN2118 simplifies the design and installation process since a single unit fills the function of both video interface and A/V connector plate.

FEATURES

- 400 MHz RGB video bandwidth
- Horizontal shift control
- Active PC audio to balanced audio interfacing
- Dual sided design provides easy access to connectors and power outlets
- Motorized vertical lift movement with local and remote control capabilities
- Adjustable flush mount allows for optional table surface matching
- Accepts two, four, or six MAAPs
- Front panel AC outlets with Edison (USA), IEC, or Europlug connectors

OPTIONAL ACCESSORIES

VGAM 6' (1.83m) MHRA cable w/ audio ....26-490-02 (page 401)
Mac adapter 15-HDM kit w/audio .....70-156-01 (page 420)
13W3 adapter 15-HDM kit w/audio.....70-157-03 (page 420)
Mini Architectural Adapter Plates .....assorted (page 117)

Faceplate A .... 400 MHz Interface, Holds 2 MAAPs, (1) Edison (USA) AC Outlet
Faceplate D .... 400 MHz Interface, Holds 2 MAAPs, (1) IEC AC Outlet
Faceplate G .... 400 MHz Interface, Holds 2 MAAPs, (1) Europlug AC Outlet

Faceplate A

Faceplate B ....Holds 6 MAAPs, (1) Edison (USA) AC Outlet
Faceplate E ....Holds 6 MAAPs, (1) IEC AC Outlet
Faceplate H ....Holds 6 MAAPs, (1) Europlug AC Outlet

Faceplate B

Faceplate C .... Holds 4 MAAPs, (2) Edison (USA) AC Outlets
Faceplate F .... Holds 4 MAAPs, (2) IEC AC Outlets
Faceplate K .... Holds 4 MAAPs, (2) Europlug AC Outlets

Faceplate C

MODEL	PART #
MODELS WITH EDISON (USA) AC OUTLETS	
(2) Faceplate A	IN2118-AA
(1) Faceplate A & (1) Faceplate B	IN2118-AB
(1) Faceplate A & (1) Faceplate C	IN2118-AC
(2) Faceplate B	IN2118-BB
(1) Faceplate B & (1) Faceplate C	IN2118-BC
(2) Faceplate C	IN2118-CC
MODELS WITH IEC AC OUTLETS	
(2) Faceplate D	IN2118-DD
(1) Faceplate D & (1) Faceplate E	IN2118-DE
(1) Faceplate D & (1) Faceplate F	IN2118-DF
(2) Faceplate E	IN2118-EE
(1) Faceplate E & (1) Faceplate F	IN2118-EF
(2) Faceplate F	IN2118-FF
MODELS WITH EUROPLUG AC OUTLETS	
(2) Faceplate G	IN2118-GG
(1) Faceplate G & (1) Faceplate H	IN2118-GH
(1) Faceplate G & (1) Faceplate K	IN2118-GK
(2) Faceplate H	IN2118-HH
(1) Faceplate H & (1) Faceplate K	IN2118-HK
(2) Faceplate K	IN2118-KK

CONTINUED ON NEXT PAGE...

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IN2118 (continued)...

SPECIFICATIONS

VIDEO — FACEPLATES A, D, AND G ONLY

Gain	Unity
Bandwidth	400 MHz (-3dB)

VIDEO INPUT AND LOCAL MONITOR OUTPUT — FACEPLATES A, D, AND G ONLY

Number/signal type	1 VGA–UXGA, Mac®, Sun®, SGI™ analog RGBHV, RGBS, RGsB* input 1 VGA–UXGA RGB local monitor loop-through
Connectors	2 female 15-pin HD (1 for input, 1 for loop-through)
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.6V to 0.7V p-p with no offset
Impedance	75 ohms
Horizontal frequency	30 kHz to 130 kHz
Vertical frequency	30 Hz to 120 Hz
Return loss	<-33.4dB @ 5 MHz

**No sync on green stripping – RGsB input signals are always output as RGsB*

VIDEO OUTPUT — FACEPLATES A, D, AND G ONLY

Number/signal type	1 analog RGBHV, RGBS, RGsB (if RGsB is input)
Connectors	5 BNC female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.5V p-p
Impedance	75 ohms
Return loss	<-49.4dB @ 5 MHz
DC offset	±1.88mV maximum with input at 0 offset

SYNC — FACEPLATES A, D, AND G ONLY

Input type	RGBHV, RGBS, RGsB
Output type	RGBHV, RGBS, RGsB (if RGsB is input)
Input level	2.4V to 3.7V p-p
Output level	4.4V p-p, unterminated
Input impedance	75 ohms
Output impedance	75 ohms
Max. propagation delay	440 ns
Max. rise/fall time	40 ns
Polarity	Negative

AUDIO — FACEPLATES A, D, AND G ONLY

Gain	Unbalanced output: +6dB; balanced output: +12dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.49% @ 1 kHz at 1Vrms
S/N	>70dB at rated maximum output
Stereo channel separation	>-56dB @ 1 kHz to 20 kHz
CMRR	>-95.2dBr @ 20 Hz to 20 kHz, 1Vrms

AUDIO INPUT — FACEPLATES A, D, AND G ONLY

Number/signal type	1 stereo, unbalanced
Connectors	1 female 3.5 mm mini stereo jack
Impedance	>10 kohms unbalanced, DC coupled
Nominal level	-10dBV (316mV)
Maximum level	+11.5dBu, (unbalanced) at 0.17%THD+N

AUDIO OUTPUT — FACEPLATES A, D, AND G ONLY

Number/signal type	2 stereo, balanced/unbalanced
Connectors	(2) 3.5 mm captive screw connectors, 5 pole
Impedance	57 ohms balanced
Gain error	±0.06dB channel to channel
Maximum level (Hi-Z)	>+24dBu, balanced or unbalanced at 0.17%THD+N
Maximum level (600 ohm)	>+24.5dBm, balanced or unbalanced at 0.17%THD+N

NOTE: *0dBu = 0.775 volts (RMS).*

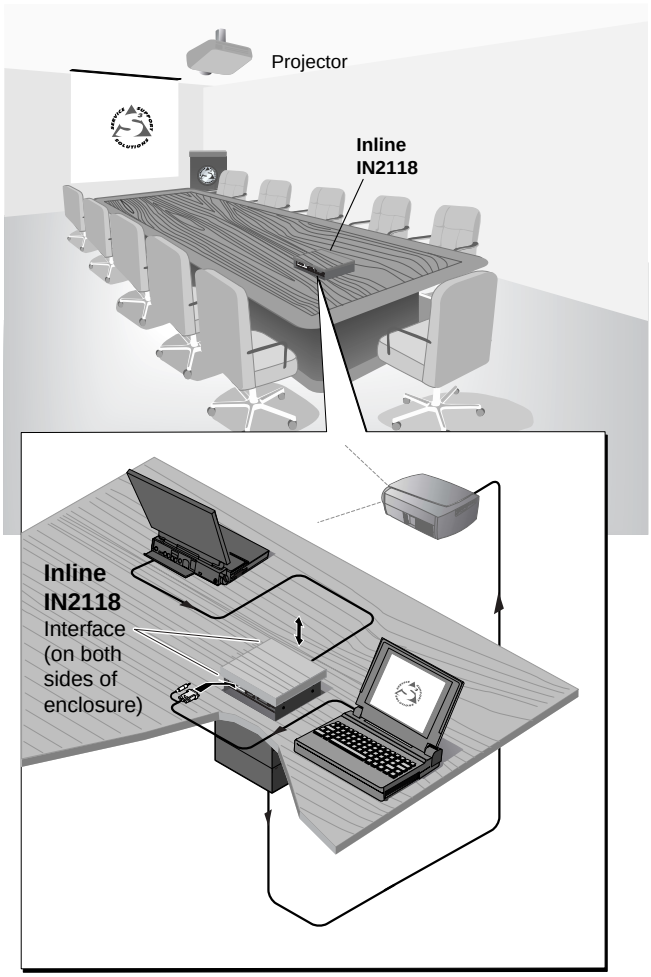
CONTROL/REMOTE — LIFT MOTOR

Contact closure	(1) 3.5 mm captive screw connector, 4-pole

GENERAL

Power	90VAC to 260VAC, 47 to 63 Hz, TBD watts, internal, autoswitchable
Rack mount	No, but furniture mountable
Enclosure type	Metal
Enclosure dimensions	
Top plate	9.15" W x 8.15" D (23.2 cm W x 20.7 cm D)
Interface elevation	3.4" (8.6 cm) above the table's surface
Overall	14.0" H x 12.2" W x 11.2" D (35.6 cm H x 30.9 cm W x 28.3 cm D), including flange (These are not the cutout dimensions.) **Note:** Use the appropriate metal Extron routing template or refer to the surface cutout dimensions in the manual before cutting a hole in the furniture or other surface. Pay special attention to the direction the unit will face. Extron is not responsible for miscut mounting holes.
Product weight	15 lbs (6.8 kg)
Shipping weight	20 lbs (10 kg)
DIM weight	TBD
Listings/Compliances	ETL (UL1950), CE
Maximum motor load	30 lbs (13.6 kg); exceeding 10 lbs (4.5 kg) will shorten the motor life
Warranty	3 years parts and labor

APPLICATION



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Interface Cables

Monitor Breakout Cables (MBCs)

(SEE PAGE 381 FOR CABLE SPECS)

Extron **MBCs** (Monitor Breakout Cables) are used with the Extron RGB 202 Rxi universal interface. The MBC connector permits simultaneous local monitor viewing and video signal transfer to an Extron interface through a 9-pin connector. This cable uses Extron 14 Conductor Cable. Extron also offers an MBC with audio that is compatible with VGA-UXGA signals. The length of each MBC varies depending on the resolution of the connected computer, signal levels, and type of cable construction. At a minimum, most MBC cables are 4 feet (1.2 m) in length.

Description	Part #
MBC MAC/QUADRA HR (See MBC Mac/Quadra Buffer for higher resolution version)	26-018-02
MBC RGB H&V (9-pin to 5 BNCs) (75 ohm video termination)	26-270-01
MBC RGBS (9-pin to 4 BNCs) (75 ohm video termination)	26-213-01
MBC SGI/13W3 HR (See MBC 13W3 Buffer for higher resolution version)	26-425-01
MBC SUN SPARC HR (See MBC 13W3 Buffer for higher resolution version)	26-424-01
MBC VGA/XGA HR (See MBC VGA Buffer for higher resolution version)	26-162-01
MBC VGA/XGA HR with Audio	26-508-01

MBC Buffer Cables

Extron **MBC Buffer** Cables buffer the output to the local monitor and to the input of the Extron RGB 202 Rxi universal interface. Using this buffering method does not affect the quality or integrity of the original output signal from the computer. All Extron buffers have 350 MHz (-3dB) bandwidth.

Description	Part #
MBC Mac/Quadra Buffer	26-339-01
MBC RGB Buffer (requires input BNC cable)	26-176-01
MBC SPARC /13W3 Buffer (Sun/SGI)	26-283-01
MBC VGA/XGA Buffer	26-338-01
MBC IBM PowerPC Buffer	26-384-01
EVC Buffer	26-448-01
HI RES ECL Buffer	26-177-01
MBC TTL Buffer	26-501-01

Laptop Breakout Cables (LBCs)

(SEE PAGE 381 FOR CABLE SPECS)

Extron **Laptop Breakout Cables** (LBCs) allow for a direct connection from a laptop, notebook, or any computer without a local monitor to any 9-pin Extron interface, such as the RGB 202 Rxi. This cable uses Extron 14 Conductor Cable. Because an LBC is simply a direct signal path from the computer's video output to the interface's input, all LBCs are 3, 6, or 12 feet in length.

Description	Part #
LBC VGA HR 3' (0.9 m)	26-224-02
LBC VGA HR 6' (1.8 m)	26-224-01
LBC VGA HR 12' (3.7 m)	26-224-03
LBC Mac HR 3' (0.9 m)	26-363-03
LBC Mac HR 6' (1.8 m)	26-363-01
LBC Mac HR 12' (3.7 m)	26-363-04
LBC SUN HR 3' (61 kHz) (0.9 m)	26-413-04
LBC SUN HR 6' (61 kHz) (1.8 m)	26-413-01
LBC SUN HR 12' (61 kHz) (3.7 m)	26-413-05
LBC SUN HR 3' (71 kHz) (0.9 m)	26-413-06
LBC SUN HR 6' (71 kHz) (1.8 m)	26-413-02
LBC SUN HR 12' (71 kHz) (3.7 m)	26-413-07
LBC SUN HR 3' (81 kHz) (0.9 m)	26-413-08
LBC SUN HR 6' (81 kHz) (1.8 m)	26-413-03
LBC SUN HR 12' (81 kHz) (3.7)	26-413-09
LBC Mac 35/VGA HR	26-394-01

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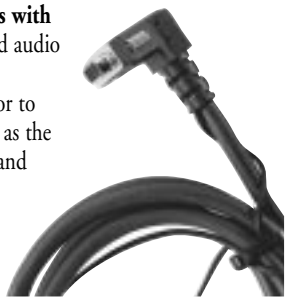
Interface Cables (continued)...

Laptop Breakout Cables with Audio

(SEE PAGE 381 FOR CABLE SPECS)



Extron **Laptop Breakout Cables with Audio** directly connect video and audio from a laptop, notebook, or any computer without a local monitor to any 9-pin Extron interface, such as the RGB 202 Rxi. For small spaces and high traffic areas, the 90° connector angle enables low profile, clean-looking cable connections in upward (indicated as "90U" in description below) or downward (indicated as "90" in description below) directions. The LBCs with audio have 3.5 mm stereo audio connectors.

Description	Part #
LBC VGA HR 3'A (0.9 m)	26-441-01
LBC VGA HR 6'A (1.8 m)	26-441-02
LBC VGA HR 12'A (3.7 m)	26-441-03
LBC Mac HR 3'A (0.9 m)	26-442-01
LBC Mac HR 6'A (1.8 m)	26-442-02
LBC Mac HR 12'A (3.7 m)	26-442-03
LBC SUN HR 3'A (61 kHz) (0.9 m)	26-443-01
LBC SUN HR 6'A (61 kHz) (1.8 m)	26-443-02
LBC SUN HR 12'A (61 kHz) (3.7 m)	26-443-03
LBC SUN HR 3'A (71 kHz) (0.9 m)	26-444-01
LBC SUN HR 6'A (71 kHz) (1.8 m)	26-444-02
LBC SUN HR 12'A (71 kHz) (3.7 m)	26-444-03
LBC SUN HR 3'A (81 kHz) (0.9 m)	26-445-01
LBC SUN HR 6'A (81 kHz) (1.8 m)	26-445-02
LBC SUN HR 12'A (81 kHz) (3.7 m)	26-445-03
LBC 90 VGA HR 3'A (0.9 m)	26-502-01
LBC 90 VGA HR 6'A (1.8 m)	26-502-02
LBC 90 VGA HR 12'A (3.7 m)	26-502-03
LBC 90U VGA HR 3'A (0.9 m)	26-502-21
LBC 90U VGA HR 6'A (1.8 m)	26-502-22
LBC 90U VGA HR 12'A (3.7 m)	26-502-23
LBC 90 MAC HR 3'A (0.9 m)	26-503-01
LBC 90 MAC HR 6'A (1.8 m)	26-503-02
LBC 90 MAC HR 12'A (3.7 m)	26-503-03
LBC 90U MAC HR 3'A (0.9 m)	26-503-21
LBC 90U MAC HR 6'A (1.8 m)	26-503-22
LBC 90U MAC HR 12'A (3.7 m)	26-503-23
LBC 90 SUN HR 3'A (61 kHz) (0.9 m)	26-504-01
LBC 90 SUN HR 6'A (61 kHz) (1.8 m)	26-504-02
LBC 90 SUN HR 12'A (61 kHz) (3.7 m)	26-504-03
LBC 90 SUN HR 3'A (71 kHz) (0.9 m)	26-505-01
LBC 90 SUN HR 6'A (71 kHz) (1.8 m)	26-505-02
LBC 90 SUN HR 12'A (71 kHz) (3.7 m)	26-505-03
LBC 90 SUN HR 3'A (81 kHz) (0.9 m)	26-506-01
LBC 90 SUN HR 6'A (81 kHz) (1.8 m)	26-506-02
LBC 90 SUN HR 12'A (81 kHz) (3.7 m)	26-506-03
LBC 90U SUN HR 3'A (61 kHz) (0.9 m)	26-504-21
LBC 90U SUN HR 6'A (61 kHz) (1.8 m)	26-504-22
LBC 90U SUN HR 12'A (61 kHz) (3.7 m)	26-504-23
LBC 90U SUN HR 3'A (71 kHz) (0.9 m)	26-505-21
LBC 90U SUN HR 6'A (71 kHz) (1.8 m)	26-505-22
LBC 90U SUN HR 12'A (71 kHz) (3.7 m)	26-505-23
LBC 90U SUN HR 3'A (81 kHz) (0.9 m)	26-506-21
LBC 90U SUN HR 6'A (81 kHz) (1.8 m)	26-506-22
LBC 90U SUN HR 12'A (81 kHz) (3.7 m)	26-506-23

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